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BALLY MANUFACTURING CORPORATION,
a Delaware corporation,

Plaintiff/Counterdefendant,

vs.

D. GOTTLIEB & CO., a corporation,
WILLIAMS ELECTRONICS, INC., a
corporation, and ROCKWELL INTERNATIONAL
CORPORATION,

Defendants/Counterplaintiffs.

) Docket No.
) 78 C 2246
)
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)
)

) Chicago, Illinois
) January 9, 1984
) 9:50 a.m.

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United States District Court

VOLUME V-A

TRANSCRIPT OF PROCEEDINGS

BEFORE THE HONORABLE JOHN F. GRADY

TRANSCRIPT ORDERED BY: MR. JEROLD B. SCHNAYER
MR. MELVIN M. GOLDENBERG

APPEARANCES:

For the Plaintiff:
Counterdefendant:

MR. KATZ
MR. TONE
MS. SIGEL

DOCKETED
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For the Defendants/
Counterplaintiffs:

MR. LYNCH
MR. HARDING
MR. GOLDENBERG
MR. ELLIOTT
MR. RIFKIN
MR. GOTTLIEB

Court Reporter:

LAURA M. BRENNAN
219 South Dearborn Street, Room 1918
Chicago, Illinois 60604

1 THE CLERK: 78 C 2246, Bally v. Gottlieb, case on
2 trial.

3 MR. TONE: Good morning, your Honor.

4 THE COURT: Good morning.

5 MR. LYNCH: Good morning, Judge.

6 THE COURT: Good morning, counsel.

7 DAVID J. NUTTING, PLAINTIFF'S WITNESS, PREVIOUSLY SWORN.

8 THE COURT: Good morning.

9 THE WITNESS: Good morning.

10 THE COURT: Go ahead, Mr. Lynch.

11 No.

CROSS EXAMINATION (Continued)

12 BY MR. LYNCH:

13 Q Mr. Nutting, at the conclusion of the day yesterday -- I
14 mean on Friday -- we were discussing the agreement that you
15 had with Bally.

16 Q Did anyone from Bally tell you on the occasion
17 of the demonstration of Flicker in September 1974 that Bally
18 itself had underway an electronic pin project?

19 A To the best of my recollection, they did not.

20 Q I show you what has been marked as Plaintiff's Exhibit 32.

21 A Yes. Q Mr. Nutting, this document was given to the Bally
22 representatives at the time of the demonstration of Flicker in
23 September 1974, correct?

24 A That is correct.

25 Q In that device or in that exhibit, on the third page it

suggests that this microcomputer system would be validly used to control the number of different devices, correct?

A. Arcade game devices, yes.

Q. Arcade game devices; vending machines as well?

A. Yes.

Q. Devices other than devices that would have a surface projectile associated with them, correct?

A. Not necessarily.

Q. Does a juke box have a surface projectile connected with it?

A. No.

Q. Does a driving game such as shown in the upper left?

A. No, but a bowler would.

Q. Pardon?

A. A bowler would.

Q. A bowler would, yes.

On the last page of the document there are projected costs for two-player pinball outlined, correct?

A. That is correct.

Q. Did you prepare that?

A. Yes, I did.

Q. What happened after that meeting? Immediately thereafter what happened between Dave Nutting Associates and Bally?

A. Relative to pinball?

Q. Yes, relative to this entire proposal for the Bally Brain?

1 A I had ongoing conversations with Dan Conroy.

2 Q I show you what has been marked as Defendants' Exhibit
3 2-K.

4 Exhibit 2-K is a letter that you wrote Mr. Conroy
5 of Bally on October 18, 1974 or thereabouts, is that correct,
6 sir?

7 A That is correct.

8 Q That letter would have been a personal letter and would have
9 been sent in the ordinary course of business, is that correct?

10 Q At this time you were trying to sell this Bally
11 machine to Bally, correct?

12 A That's correct.

13 Q Did you at some point in time receive notice from Bally
14 that they were not interested?

15 A At some point in time, yes.

16 Q Sometime in 1975?

17 A In 1975.

18 Q And at that point in time you attempted to interest
19 Mr. John Whelan of Mulligan, isn't that correct?

20 A That's correct.

21 Q I show you what has been marked as Exhibit 2A,
22 Mr. Nutting.

23 Exhibit 2A is a letter that you wrote to
24 Mr. John Whelan of Mulligan on or about May 21, 1975,
25 is that correct?

1 Q At that time you indicated:

2 "As of now" -- in the third paragraph -- "the
3 system is completely debugged and ready for im-
4 mediate production. The ultimate test in my mind,
5 the system can withstand a one-inch spark from a
6 status generator."

7 Yes. When was that test done?

8 A That test would have been -- particular test would have
9 been done in the October time frame.

10 Q Now, at this time you were trying to sell this Bally
11 Brain concept to Bally, correct?

12 A That's correct.

13 Q Did you at some point in time receive notice from Bally
14 that they were not interested?

15 A At some moment in time, yes.

16 Q Sometime in 1975?

17 A In 1975.

18 Q And at that point in time you attempted to interest
19 Mr. Judd Weinberg of Gottlieb. Isn't that correct?

20 A That's correct.

21 Q I show you what has been marked as Exhibit 7A, to you was
22 Mr. Nutting.

23 Exhibit 7A is a letter that you wrote to
24 Mr. Judd Weinberg of Gottlieb on or about May 21, 1975.

25 Correct?

1 A That is correct.

2 Q Now, in that letter you indicate at the last sentence on
3 the first page that: "The Bally design will achieve the same
4 results but will cost twice as much to produce, and they will
5 never be able to compete."

6 A Do you see that, Mr. Nutting?

7 A Yes.

8 Can I read it? (Witness reading document.)

9 Okay.

10 Q Now, at that point in time then you must have received
11 some information about the Bally design. Correct?

12 A Yes, that must be correct.

13 Q And you are indicating that the Bally design was different
14 than your design. Correct?

15 A Yes, I am.

16 Q On the next page -- in your testimony you indicated that
17 when you approached Gottlieb there was a nondisclosure agree-
18 ment problem.

19 A That is correct.

20 Q To clarify the record, it is the case, is it not, that
21 when you approached Gottlieb their return response to you was
22 that they wanted you to sign an agreement whereby they would
23 not be bound by any confidential relationship with Dave
24 Nutting Associates? Correct?

25 A They asked me to sign a nondisclosure agreement.

1 Q Well, nondisclosure is the problem -- is the word with
2 which I have a problem? With Mr. Weinberg some changes that
3 you wished to make? It was Plaintiff's Exhibit 65, potentially arrange
4 ment that he Plaintiff's Exhibit 65 is the response that
5 you received, correct?

6 A That is correct. Gottlieb and Dave Nutting Associates

7 Q And just so we understand what is meant by your charac-
8 terization of a nondisclosure agreement, Gottlieb was wanting
9 Dave Nutting Associates to sign an agreement saying anything
10 Dave Nutting Associates sent to Gottlieb would be -- would not
11 be subject to a confidential relationship or any agreement of
12 confidence? Correct? Dave Nutting Associates about their pinball game
13 A That's basically correct, yes.

14 A Directly or indirectly?

15 Q At this time did you make any disclosure to them?

16 A At this time in May of '75?

17 A Yes.

18 A No, not beyond that.

19 Q Now, at the top of page 1 of Exhibit 7-A, you state
20 in the second sentence, quote:

21 "We are not presenting a computer-aided pinball."
22 correct?

23 A Where is this now?

24 Q The second sentence on page 2 of Exhibit 7-A.

25 A Repeat your question.

1 Q On page 2 of your letter to Mr. Weinberg, 7-A, Exhibit
2 7-A, you were taking up with Mr. Weinberg some changes that
3 you wished to be effected in that non-confidentiality arrange-
4 ment that he had suggested, correct?

5 A That is correct.

6 Q It was because Gottlieb and Dave Nutting Associates
7 could not come to an agreement about those non-confidentiality
8 proceedings that no disclosure was ever made to Gottlieb,
9 correct?

10 A That is correct.

11 Q It is a fact that no disclosure of any type was made to
12 Gottlieb by Dave Nutting Associates about their pinball game
13 or about the Bally Brain, correct?

14 A Directly or indirectly?

15 Q At this time did you make any disclosure to them?

16 A At this time in May of '75?

17 Q Yes.

18 A No, not beyond that.

19 Q Now, at the top of page 2 of Exhibit 7-A, you indicate
20 in the second sentence, quote:

21 "We are not patenting a computer-run pinball,"
22 correct?

23 A Where is this now?

24 Q The second sentence on page 2 of Exhibit 7-A.

25 A Repeat your question.

Q The second page of Exhibit -- I mean the second sentence on the second page of Exhibit 7-A indicates, quote:

"We are not patenting a computer-run pinball," correct?

A I go on to say that it related to pinball games and other games.

Q At the time you as a games designer recognized, did you not, Mr. Nutting, that microprocessor control inevitably would come to the game market, the arcade game market?

A I as a games designer, yes.

Q You recognized that in 1974, correct?

A Yes.

Q Now, at about the same time that you were contacting Gottlieb, you made a contact with the Mirco Company in Phoenix, correct?

A That is correct.

Q You eventually wound up with an agreement with Mirco, isn't that right?

A That is correct.

Q Now, pursuant to that, you undertook to provide a pinball game design for Mirco, isn't that right, Mr. Nutting?

A Yes.

Q What time frame are we in now?

A In 1975.

A Yes.

Q Had you ever

1 Q Which pinball playfield had you designed prior to the
2 time of designing one for Mirco?

3 A In the development of the pinball project at MCI, I had
4 worked out various playfield designs.

5 Q Had it ever been incorporated in a game that was played
6 in any arcade?

7 A No, it did not.

8 Q So this was the first pinball playfield design that you
9 were proposing for production, the one that you proposed to
10 Mirco?

11 A For production, yes.

12 Q At that time you had a Gottlieb Flying Carpet game at
13 Dave Nutting Associates, correct?

14 A That is correct.

15 Q Did the design that you proposed to Mirco have any rela-
16 tionship to the Flying Carpet design?

17 A Yes, it did. The design approach that I presented to
18 Mirco was that we did not have a time frame to complete a
19 whole new playfield, that if we took an existing playfield
20 and modified it, we could then get into production and not
21 have the game design cycle of testing out a new playfield.

22 Q Now, I show you what has been marked as Exhibit 3-H,
23 Mr. Nutting.

24 Now, Exhibit 3-H is a letter that you received
25 from Mr. T. J. Connors, president of Mirco, correct?

A That is correct. e doesn't work, we have no idea of how

Q At this time, August 29th, 1975, had something by way of a pinball machine been sent to Mirco?

A Yes. They had received a pinball. that is correct,

Q They had received a pinball machine?

A Yes. matter of fact, Mirco never used the computer design

Q Prior to the time that Mirco had this agreement with Dave Nutting Associates, Mirco was a games manufacturer, isn't that correct? know whether they did or not?

A Yes, they were.

Q But they had never made a pinball game before, isn't that correct? operated in it?

A That is correct. the --

Q Now, in Exhibit 3-H, which has been exploded up in the placard here on the easel, Mr. Connors, is indicating to you that the prototype doesn't work. right?

A Yes. You understood that what he was referring to there was the prototype that Dave Nutting Associates had sent him, correct? correct?

A That is correct. right.

Q He also said, "The software does not work," isn't that correct?

A That is correct.

Q That was an iteration of a development by Intel, the next step, so to speak, after the 8034, correct?

1 Q Since the software doesn't work, we have no idea of how
2 the game is supposed to score, isn't that correct?

3 A Well, you are reading the letter.

4 According to Mr. Connors, that is correct,
5 yes.

6 Q As a matter of fact, Mirco never used the computer design
7 provided by Dave Nutting Associates, did they?

8 A I cannot answer that.

9 Q You don't know whether they did or not?

10 A No, I don't.

11 Q In the prototype referred to here, what was the processor
12 that was incorporated in it?

13 A I believe we used the --

14 Q In the prototype.

15 A The prototype we delivered to them I believe was the 4040.

16 Q It was a 4040 four-bit processor, right?

17 A Yes.

18 Q At a later time a design was provided to them with a
19 Fairchild F-8, correct?

20 A Yes, that is correct.

21 Q But the prototype referred to in 3-H was a four-bit
22 4040?

23 A That is correct.

24 Q That was an iteration or a development by Intel, the
25 next step, so to speak, after the 4004, correct?

1 A. That is correct.

2 Q. The 4004 was what was in the Flicker game, correct?

3 A. That is correct.

4 MR. LYNCH: I have no further questions, your Honor.

5 BY MR. GOLDENBERG:

6 Q. Mr. Nutting, prior to Mr. Frederiksen undertaking any
7 work with applying a microprocessor to a pinball game, isn't
8 it true that you had knowledge of the use of matrices in
9 various types of games?

10 A. We had used a matrix in one of our quiz games, yes.

11 Q. What was the name of that game?

12 A. Puzzler, a game called Puzzler,

13 Q. When was that, sir?

14 A. That would have been around 1970, I would guess.

15 Q. A number of those Puzzler games were sold, were they not?

16 A. I believe we built about 50.

17 Q. And you sold a number of those games, didn't you?

18 A. Yes.

19 Q. In the matrix used in this Puzzler game, the lamps and
20 the switches were connected in the matrix, were they not?

21 A. I am very vague on how the matrix was actually connected
22 up. I was not responsible for that.

23 Q. Do you know whether the switches were connected in the
24 matrix?

25 A. Not for sure. I can't --

Q How about the lamps?

A I can't for sure tell you.

Q What else could the matrix have been connected to?

A It could have been connected to the stepping switches.

Q What stepping switches, sir?

A There was a stepping switch in there which was the basic logic.

Q Would that be the input to the matrix or the output to the matrix?

A It would be basically input.

Q But in any case, a matrix was used in the Puzzler game sold by -- was that Milwaukee Coin who did that?

A No, that would have been Nutting Industries.

Q Nutting Industries did that in 1970, 1971?

A In that time period.

Q I understand when -- or tell me if my understanding is correct, sir -- that when Mr. Frederiksen proposed to you the idea of using the microprocessor in this game control, you had some doubts about it?

If I state that incorrect, please so advise me and state what the fact is.

A No, I am trying to relate as to what period of time.

Nutting - Cross

1 Q Early, sir, in December of 1973.

2 A Early in December '73 was still the evolution. I had --
3 there was nothing to have doubts about at that point.

4 Q Did you at any point have doubts about the matter?

5 A Yes, I did.

6 Q When was that?

7 A At the period where Jeff actually stated he was --
8 appears that we are able to interconnect a microprocessor into
9 the multiplexing matrix system.

10 Q And wasn't one of your concerns about the ability of the
11 microprocessor to handle switch closures?

12 A Yes, it was.

13 Q And wasn't it the fact that your concern was that some of
14 these switch closures were very slow?

15 I think you made reference to the rollover
16 switch in your direct testimony.

17 A Yes.

18 Q Now, isn't it the fact that at some point you received
19 an assurance from Mr. Frederiksen that the microprocessor
20 would be able to do the job?

21 A He indicated that through software he felt he could
22 solve the problem.

23 Q And this was after Mr. Frederiksen had meetings with
24 representatives of companies selling microprocessors. Isn't
25 that true?

1 A This was after a meeting with the Intel people.

2 Q Did he tell you at that occasion that he had received
3 an assurance from the Intel people that the microprocessor
4 could operate fast enough to do the job of switch scanning?

5 A I don't understand your question.

6 Q After Mr. Frederiksen met with the Intel people, he gave
7 you some kind of assurance with respect to the ability of
8 the microprocessor to control pinball, did he not?

9 A Yes, he did.

10 Q What was the nature of that assurance, sir?

11 A I cannot answer that. I guess it was more my faith in
12 Jeff at that point.

13 Q Well, did he deal with any specific topic, like the
14 ability of the microprocessor to handle, in software, the
15 switch closures?

16 A Well, at the time you have to understand that I was
17 going through a training also. So it was a two-way conversa-
18 tion of Jeff trying to teach and train me in this new art so
19 that I could come up and make some type of management deci-
20 sions.

21 Q I understand that, sir. But could you answer my question?
22 And I can repeat it or have the reporter read it back to you.

23 A Could you repeat the question.

24 Q (Question read.)

25

1 BY THE WITNESS:

2 A Mr. Goldenberg, I really can't answer that because I was
3 in a training period where I myself wasn't half -- really
4 understanding what even Jeff was telling me at the time.

5 BY MR. GOLDENBERG:

6 Q But you had a concern about switch closures, did you not?

7 A Yes, I did.

8 The way he explained it to me was that the --
9 if we were going to run at 60 cycles, which he was talking
10 about at the time, that meant to me that, as the ball rolled
11 over a switch, that means instead of getting 100 points, I
12 might trigger like 10 times; or the next time it rolls over,
13 it might do it in half the time.

14 And that's what I was concerned about.

15 Q And do I understand correctly, sir, that following this
16 meeting with Intel, among other things he gave you assurance
17 about the ability of the Intel microprocessor to handle that
18 problem in software?

19 A As I recall the situation, yes.

20 MR. GOLDENBERG: Thank you. I have no further
21 questions.

22 REDIRECT EXAMINATION

23 BY MR. TONE:

24 Q Mr. Nutting, during Mr. Lynch's questions Friday after-
25 noon he inquired about the purpose of the Fairchild and

1 other semiconductor salesmen who called on MCI in 1973.

2 And in response to his questions you told him
3 that they were there to sell microcomputers, I believe.

4 Do you recall that series of questions and
5 answers?

6 A Yes, I do.

7 Q Were the Fairchild and other semiconductor salesmen there
8 to sell any other products in addition to microcomputers?

9 A Yes, they were. That's basically how they made initial
10 contact: They were calling on us to sell other solid state
11 devices.

12 Q And by solid state devices, what do you mean? Can you tem
13 be more concrete, specific?

14 A Well, various solid state devices were always coming
15 forth on the market.

16 Basically, solid state devices are those little
17 chips that had various functions.

18 Q Are those devices that were referred to in this pro-
19 ceeding as random logic?

20 A Yes, those would be the devices used in a random logic
21 circuit.

22 Q Would they include diodes?

23 A Oh, yes.

24 Q And transistors?

25 A Oh, yes, diodes, transistors.

Q. I/C chips?

A. I/C's, yes.

1 Q Mr. Lynch this morning called your attention to the second
2 page of Defendants' Exhibit 7-A, which is a letter from you to
3 Mr. Judd Weinberg of Gottlieb dated May 21, 1975. He read
4 you the words in the first paragraph:

5 A "We are not patenting a computer-run pinball."

6 Q Do you have that exhibit in front of you?

7 A Yes, I do.

8 Q There is a comma after pinball, is there not?

9 A Yes.

10 Q Will you read the rest of the sentence?

11 A "We are patenting a unique cost-effective
12 system of interfacing a computer or any logic system
13 with the unique devices as related to pinball games
14 and other type games."

15 Q You told Mr. Lynch this morning about a prototype that
16 Dave Nutting Associates delivered to Mirco in the summer of
17 1975, did you not?

18 A Yes, I did.

19 THE COURT: Excuse me one moment, Mr. Tone.

20 Court (Brief discussion off the record.)

21 THE COURT: Thank you.

22 BY MR. TONE:

23 Q You told him that was a prototype referred to in Defen-
24 dants' Exhibit 3-H, which is a letter from Mr. Connors of
25 Micro to you, is that correct?

1 A That is correct.

2 Q What was the state or the condition of the prototype
3 model that was delivered by Dave Nutting Associates to Mirco
4 that summer?

5 A We delivered to Mirco in the July time period of '75 a
6 fully functional system, a fully operational pinball game.
7 However, the actual game software had not been
8 completed. In other words, just the system itself was working.
9 The game was not fully functional from a game play stand-
10 point.

11 Q I show you a document marked Plaintiffs' Exhibit 322,
12 which purports to be a letter dated September 5th, 1975
13 from you to Mr. Connors.

14 Did you write that letter to Mr. Connors in
15 response to his letter to you of the previous month, which is
16 marked Defendants' Exhibit 3-H?

17 A Yes, I did.

18 MR. TONE: Your Honor, instead of asking the witness
19 a number of questions about the letter, I request that the
20 Court read it now, and then it will avoid my having to ask
21 him questions about it.

22 THE COURT: Fine.

23 MR. TONE: Perhaps I should offer it first. That
24 is a preliminary step. I offer the letter, your Honor.

25 THE COURT: All right, I will receive it.

1 MR. RIFKIN: What number is that, 322? Beyond.

2 (Plaintiff's Exhibit 322 was received into evidence.)

3 (Brief interruption.)

4 THE COURT: All right, I have read that.

5 MR. TONE: Thank you, your Honor. You may stand.

6 BY MR. TONE:

7 Q Mr. Nutting, Mr. Goldenberg referred in his cross examina-
8 tion to a matrix in the Puzzler game.

9 Did the Puzzler game use any matrix multi-
10 plexing?

11 A No, it did not.

12 Q There was also reference during Mr. Goldenberg's cross
13 examination to the speed of the switch closures in the pinball
14 game.

15 In the traditional pinball game, was it the
16 switches that were slow or the relay logic, if you know?

17 A Well, they both could be.

18 MR. TONE: All right. May I confer for a moment,
19 your Honor?

20 THE COURT: Yes.

21 (Brief interruption.)

22 BY MR. TONE:

23 Q Does the switch closure time depend in any way on the
24 action of the ball?

25 A Yes. It can vary, as I indicated before, anywhere from

1 a tenth of a second up to a full second and even beyond.

2 remain. MR. TONE: No further redirect, your Honor. after the

3 testimony MR. LYNCH: No questions, your Honor.

4 MR. GOLDENBERG: I have no questions. rebuttal. Do

5 you want THE COURT: Thank you, Mr. Nutting. You may stand
6 down. all?

7 (Witness excused.) ur Honor, Mr. Nutting and Mr. Frank-
8 son I have put on my own witness list. I may require them as
9 part of my case. I don't presently know whether that is
10 necessary or not, but I would prefer that the rule remain in
11 force.

12 THE COURT: All right.

13 MR. TONE: All right.

14 We are calling our next witness, your Honor.

15 (Brief interruption.)

16 (Witness sworn.)

17 THOMAS S. NIEMAN, PLAINTIFF'S WITNESS, SWORE.

18 DIRECT EXAMINATION

19 BY MR. TONE:

20 Q Will you state your name and spell your last name?

21 A My name is Thomas S. Nieman, n-i-e-m-a-n.

22 Q Where do you live, Mr. Nieman?

23 A I live in Winnetka, Illinois.

24 Q Your address?

25 A 519 Lake Lane in Winnetka.

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MR. TONE: I don't know if Mr. Nutting wants to remain, but may the witness remain in the courtroom after the testimony is completed?

THE COURT: We have a problem about rebuttal. Do you want the rule to apply to rebuttal witnesses, possible rebuttal?

MR. LYNCH: Your Honor, Mr. Nutting and Mr. Frederiksen I have put on my own witness list. I may require them as part of my case. I don't presently know whether that is necessary or not, but I would prefer that the rule remain in force.

THE COURT: All right.

MR. TONE: All right.

We are calling our next witness, your Honor.

(Brief interruption.)

(Witness sworn.)

THOMAS S. NIEMAN, PAINTIFF'S WITNESS, SWORN.

DIRECT EXAMINATION

BY MR. TONE:

Q Will you state your name and spell your last name?

A My name is Thomas S. Nieman, N-i-e-m-a-n.

Q Where do you live, Mr. Nieman?

A I live in Winnetka, Illinois.

Q Your address?

A 510 Elder Lane in Winnetka.

Q What is your business address?

A I work for the Bally Manufacturing Corporation at 8700 West Bryn Mawr Avenue in Chicago.

Q Do you hold a particular entitled job?

A Yes, I do. I work for the corporation, and I am director of market development.

Q How long have you been director of market development?

A Approximately two months.

Q What position did you hold before that?

A I was director of marketing for the Bally/Midway Manufacturing Company.

Q Let's start from the other direction and go through chronologically your employment history.

A I have been with Bally it will be 12 years this spring.

Q Did you come with Bally after your formal education was completed?

A Yes, sir, I did.

Q Didn't hold any job in between?

A No, sir.

Q What was your formal education?

A I graduated from the University of Michigan in 1971.

Q What was your major or specialty?

A My degree was in speech.

Q Tell us the jobs you held in Bally and what your responsibilities were in those jobs.

1 A Over the entire 12 years?

2 Q Yes, very briefly.

3 A Initially I worked for a division called Carousel Time
4 in coming with Bally. I held a variety of jobs, beginning
5 with working in the shop in regard to maintenance of the
6 equipment and kiddie rides. I drove a truck which delivered
7 the equipment to locations.

8 I held various positions up into the office,
9 where I would keep track of the income generated from the
10 various pieces of equipment and suggest rotations.
11 and I worked for a while as a regional manager for
12 Carousel Time and monitored a number of locations throughout
13 the State of Michigan and northern Ohio, and I finished with
14 Carousel Time in a job described as project coordinator.
15 I was involved in the construction aspect and the securing of
16 equipment after they had secured a lease for a particular
17 arcade in getting the project ready and getting the store in
18 open.

19 At that point in time I transferred out of
20 Carousel Time and into the Bally Manufacturing corporate
21 offices. I was initially involved in the sales department.

22 Q Selling what?

23 A Well, that department was responsible for the sale of
24 the full product line of Bally, including coin-operated
25 pinball equipment, coin-operated gaming equipment.

But my responsibilities generally were with the amusement equipment, the pinball machines.

Q When did that transfer take place?

A In 1975.

Q What has your responsibility been since that time with reference to pinball machines?

A With the pinball machine I was initially regional sales manager. I became more involved in the sales. I moved over into the area of promotional sales. I then assumed a responsibility for the advertising for the product line and became promotional and advertising manager.

Q For what?

A For still Bally Manufacturing Corporation, for the pinball product line.

Q But for the pinball product line specifically?

A That is correct, sir.

They divisionalized the pinball product line in 1978, and at that point I was made director of marketing for the Bally pinball division. I held that job up until fall 1982, when I assumed the position of director of marketing for the Bally/Midway Manufacturing Company, which was a consolidation of both product lines, both coin-operated pinball equipment and coin operated video equipment.

Q How long, to recapitulate with one question, were you involved in marketing pinball machines for Bally?

1 A Well, if you take the term "marketing" in a general
2 sense, including the sales and marketing of the product, it
3 would have been since I transferred into the corporate offices
4 in 1974.

5 assessing our pinball equipment, and we had some racks into
6 the market, along with an assortment of other pinball equipment
7 to see their merit in relation to player interest and sales
8 potential.

9 Q Do you know what records were kept of the sales and
10 production of pinball machines during the period 1974 through
11 1977?

12 A Well, they kept a variety of records done by different
13 departments.

14 Q Certainly the ones that had the most bearing
15 to be and to the marketing department were sales activities,
16 production numbers, shipments, dollar values, things like
17 that.

18 Q Did they prepare and maintain monthly production records?

19 A Yes, sir. The production numbers would have been main-
20 tained on a daily basis; then an issuance of a monthly report,
21 and then of course a year-end to date.

22 Q And very briefly in a few words what did the monthly
23 report of production contain or show?

24 A It would show the number of units produced.

25 Q The monthly report would also show the dollar value of the

1 Q During the time you had responsibility for marketing
2 pinball machines did you have reason or need to gauge the
3 success of various pinball machines in the marketplace?

4 A Certainly part of the responsibility of the job included
5 assessing our pinball equipment after it had been placed into
6 the market, along with an assessment of competitive equipment
7 to see their merit in relation to player appeal and sales
8 potential.

9 Q Do you know what records Bally kept of its sales and
10 production of pinball machines during the period 1975 through
11 1982?

12 A Well, they kept a variety of records done by different
13 departments.
14 Certainly the ones that had the most meaning
15 to me and to the marketing department were sales activities,
16 production numbers, shipments, dollar values, things like
17 that.

18 Q Did Bally prepare and maintain monthly production records?

19 A Yes, sir. The production numbers would have been main-
20 tained on a daily basis; then an issuance of a monthly report,
21 and then of course a year-end to date.

22 Q And very briefly in a few words what did the monthly
23 report of production contain or show?

24 A It would show the number of units produced.

25 The daily report would obviously show the units

1 produced for that day. The monthly report would show a culmina-
2 tion of that month's activities, of the total number of units
3 produced by model.

4 Q Did Bally also prepare and maintain year-end summaries of
5 the number of pinball games sold during the year?

6 A Yes, sir, they did.

7 Q And were all of these reports prepared and maintained in
8 the ordinary course of Bally's business?

9 A Yes, sir.

10 Q I show you Plaintiff's Exhibit 88, consisting of four
11 pages, the first of which purports to be a letter from
12 Patrick J. Burns of Welsh and Katz, to Messrs. Wayne Harding
13 and Melvin Goldenberg, signed -- a covering letter; and the
14 last three sheets are tabulations of unit sales.

15 And I ask you whether you are familiar with
16 the three sheets attached to the letter?

17 MR. TONE: May I hand one up to your Honor?

18 BY THE WITNESS: You should have the entire year's activity.

19 A Yes, I'm familiar with these.

20 BY MR. TONE: This report is based upon those December sales re-

21 Q And I show you another exhibit marked Plaintiff's
22 Exhibit 88-A, which purports to be another letter from
23 Mr. Burns to the same gentlemen, and ask whether you supplied
24 Mr. Burns with the information stated in that letter?

25 A Yes, I talked to Mr. Burns. Information we used for over

1 MR. TONE: I'll hand that one up also, your Honor.

2 That completes the other exhibit.

3 BY MR. TONE:

4 Q Did you -- was the summary of the last three pages of
5 88 prepared by you or under your direction and supervision?

6 A Yes, sir, it was.

7 Q And upon what records was that summary based?

8 A These are sales numbers, not production numbers.

9 There's a computer-generated report which does
10 a monthly culmination of that month's activity in regard to
11 sales. It breaks it out by model, model name, model number,
12 sales numbers and dollar value -- dollar value.

13 And is done -- it's generated for the end of
14 the month for every month. It then carries a year-to-date
15 total. And for this report we pulled the December reports
16 for each of the years, which would then carry that December's
17 month's activity and the year-to-date; and if you then add
18 those two numbers, you should have the entire year's activity
19 in sales.

20 Q And was this report based upon those December sales re-
21 ports?

22 A Yes, it was. All except one year.

23 Q And what year is that?

24 A In 1975 we couldn't find the December 31st report that
25 would have given us the same information we used for every

1 other year.

2 Q How did you then obtain the figures for the year 1975?

3 A After going through as many records and files as we
4 could, and not finding any trace of that report, we did know
5 a few facts and we worked the math this way:

6 We did know the dollar volume for the year. We
7 knew the models that were manufactured --

8 Q The dollar volume for the sales --

9 A The total gross dollar --

10 Q -- of pinball machines?

11 A Yes, sir. The total gross dollar value for the sale of
12 all coin-operated pinball machines for 1975.

13 We then took the -- we looked at the individual
14 models and we knew what their sales price was -- were? -- we
15 then struck an average and divided that into the gross dollar
16 volume, and arrived at this approximate number under 1975 of
17 27,117 units.

18 Q Did you have any way of checking or verifying the ac-
19 curacy of the number arrived at in that way?

20 A Well, we looked at the years on both sides of 1975; and
21 from my best recollection that number would fit into an
22 approximation of what that number was.

23 I'm not stating that it was precisely 27,117
24 units, but it was approximately that.

25 Unfortunately, then, I wasn't able to break

1 it out on a per-model basis like I did for the rest of the
2 years.

3 Q You have in court with you, Mr. Nieman, the original
4 records on which Plaintiff's Exhibits 88 and 88-A are based?

5 A No, sir, I don't. There are sales
6 reports, and I did not bring sales reports.

7 Q Do you have the December sales reports with you?

8 A Not with me, no, sir.

9 Q Not with you?

10 A Not the sales reports. I have the production reports.

11 Q You and I had a misunderstanding then because I thought
12 I told you to bring them.

13 A I am sorry.

14 MR. TONE: If counsel wants them, he will have them.

15 BY MR. TONE:

16 Q Now, I hand you Mr. Nieman, Exhibit 88-A, and I ask you whether you recognize that exhibit.

17 A Yes, sir. I do.

18 Q Was it prepared by you or under your direct or indirect supervision?

19 A Yes, sir. It was.

20 Q Tell me what it shows.

21 A What it shows is the sales of a set of 1974 and in 1981
22 and distinguishes between the "1974" and "1981" for
23 each year.

1 Q What do you have in Court as the underlying figures or
2 records?

3 A I have in my briefcase the production numbers.

4 Q Production numbers?

5 A The production numbers for these years. These are sales
6 numbers, and I did not bring sales reports.

7 Q Do you have the December sales reports with you?

8 A Not with me, no, sir.

9 Q Not with you?

10 A Not the sales reports. I have the production reports.

11 Q You and I had a misunderstanding then because I thought
12 I told you to bring them.

13 A I am sorry.

14 MR. TONE: If counsel wants them, we will have them.

15 BY MR. TONE:

16 Q Now, I hand you, Mr. Nieman, Plaintiff's Exhibit 382,
17 and I ask you whether you recognize that exhibit.

18 A Yes, sir. I do.

19 Q Was it prepared by you or under your direction and super-
20 vision?

21 A Yes, sir. It was.

22 Q Tell me what it shows.

23 A What it shows is the annual sales for 1974 through 1981
24 and distinguishes between electromechanical and electronic for
25 each year.

Q Does it show sales in units or in dollars?

A It shows sales in units.

At the bottom line, a notation of home games -- those are not coin-operated pinball equipment. Those are games built for the consumer market.

Q On what information was this schedule based?

A The same source.

MR. TONE: At this point, your Honor, I would like to offer Plaintiff's Exhibits 88, 88-A and 382.

MR. LYNCH: I have no objection, your Honor, subject to perhaps the need to examine those documents later.

THE COURT: All right, they will be received.

(Plaintiff's Exhibits 88, 8-A and 382 were received into evidence.)

BY MR. TONE:

Q When were electronic pinball machines first sold by Bally, Mr. Nieman?

A They were first sold to a third party in the fourth quarter of 1976.

Q Can you give us a general comparison between the sales volume of electronic pinball machines after you began to market them at Bally and the sales volume of the electro-mechanical pinball machines previously marketed by Bally?

A Well, initially, our intent was to market on the first units games in both formats. We initially built a small

percentage of a model in the electronic format while building a vast majority in electromechanical very quickly, and by 1977 the electronic format was the dominant preference by the marketplace.

We built beyond two and three initial models in both formats. We then slid in and built 100 percent of the models in the electronic format.

Q According to Plaintiff's Exhibit 382, by 1977, in the year 1977, electronic pinball games produced by Bally numbered over 41,000 and electromechanical fewer than 17,000.

Do you notice that?

A Yes, sir. That is correct.

1 Q Then as I understand the exhibit, by the year 1978, the
2 production of electromechanical games virtually ceased, is
3 that correct?

4 A That is true, sir.

5 Q The number of electronic games had increased to in excess
6 of 76,000?

7 A Yes, sir.

8 Q Except for between one and three machines per year and
9 subsequent years, Bally was not building any electromechanical
10 games, is that right?

11 A We were not building nor were we selling. These are
12 sales numbers, sir.

13 Q These are sales numbers as distinguished from production
14 numbers?

15 A Yes, sir.

16 Q Based upon your experience in the marketing of pinball
17 games, coin-operated pinball games, can you tell us the reason
18 for the switch in Bally's production during the period 1977,
19 1978, from electromechanical games to computer-controlled pin-
20 ball games?

21 A Well, the preference in the marketplace was clearly that
22 they wanted -- they preferred and wanted the electronic for-
23 matted games versus the electromechanical.

24 Q When you speak of preference in the marketplace, do you
25 mean as the buyer or the marketplace, the player of the game

1 or the operator of the game arcade?

2 A I believe the preference really came from both ends.
3 Both the end user, the player, had a preference for elec-
4 tronic games. That reflected in probably additional revenues
5 in the cash box, which would mean the operator then would have
6 a preference for electronic pinball machines, and, secondly,
7 because of the maintenance on the electronic pins proved to
8 be less expensive, the operator again preferred the electronic
9 formatted pinball machines.

10 Q At some point early in the process of commencing the
11 marketing of electronic pinball games, did Bally conduct any
12 kind of field test?

13 A Yes, sir. Throughout 1976 we did an extensive field
14 test for the electronic pinball machines.

15 Q Will you describe that test?

16 A Well, approximately 30 to 40 units were built up. The
17 game was called Bow and Arrow, which we had built in electro-
18 mechanical format previously.

19 20 of those units were placed out in the loca-
20 tions to test the income on a comparative basis, both to
21 other electromechanical pinball machines and in many in-
22 stances head-to-head with the same Bow and Arrow game but in
23 electromechanical format.

24 Q Did Bally keep a record of the results of those tests?

25 A Yes, sir. We monitored the income reports from those

1 locations very closely and then maintained a record and
2 collated that information. 378, 379, and 380 are?

3 Q When were those tests made?

4 A Well, I believe the first installation was in late,
5 January or early February of '76, and the test was really
6 run through the balance of '76. equipment in that particular

7 I believe there's, oh, at least 40 weeks of
8 maintenance of income figures from those locations, those
9 specific 20 locations. It is the Belvidere Mall, North

10 Q I show you three exhibits marked Plaintiff's Exhibits
11 378, 379, and 380. graph on the left-hand column represents
12 a dollar THE COURT: This is a pinball, is it, this Bow and
13 Arrow? It charts off in five-week increments the averages.

14 THE WITNESS: Yes, your Honor. Bow and Arrow was
15 the name of a particular model of a pinball machine. We had
16 originally built it electromechanically, and then for a proto-
17 type basis, we built units in the electronic format and then
18 placed them in ball equipment in that location. That would
19 be represented by the dotted line across.

20 It then goes out in five-week increments up
21 to 40 weeks.

22 Q Would the same explanation apply, except that the time
23 period may be different, to the other sheets in Plaintiff's
24 Exhibit 378?

25 A Yes, that is true. The 40 weeks has to apply to

1 BY MR. TONE: in the next page, the first tabular is a bar graph.

2 Q Can you tell us what 378, 379, and 380 are?

3 A Exhibit 378 is a bar graph that does a comparison between
4 the electronic Bow and Arrow, which is represented in the
5 solid bar, compared to the average income generated from all
6 other electromechanical pinball equipment in that particular
7 location. Location, charts it out, and takes the elect. and

8 The top sheet on mine reads Belvidere. That
9 refers to the location. It is the Belvidere Mall, North
10 Chicago. So it is a head-to-head comparison of the

11 The graph on the left-hand column represents
12 a dollar figure and across the bottom represents weeks, or
13 time. It charts off in five-week increments the averages.

14 For example, the first bar graph there would
15 be a five-week average income for the electronic Bow and
16 Arrow, comparing it directly during that same period of time
17 to the average income generated from all other electro-
18 mechanical pinball equipment in that location. That would
19 be represented by the dotted line across.

20 It then goes out in five-week increments up
21 to 40 weeks. Is it between represent individual weeks?

22 Q Would the same explanation apply, except that the time
23 period may be different, to the other sheets in Plaintiff's
24 Exhibit 378? Is the electronic?

25 A Yes, that is true. The 40 weeks happen to apply to

1 Belvidere. On the next page, the Indianapolis location is only
2 35 weeks, but the reference to the income and the time is all
3 the same.

4 Q Would you now take a look at Plaintiff's Exhibit 379 and
5 tell us what that is?

6 A Exhibit 379 is somewhat similar in that it takes an
7 individual location, charts it out, and takes the electronic
8 Bow and Arrow income and compares it to the electromechanical
9 Bow and Arrow that was in that location.

10 So it is a head-to-head comparison of the
11 income of the two machines in the same location.

12 Q A head-to-head comparison of two Bow and Arrow machines,
13 one electromechanical and the other electronic?

14 A That is correct, sir, for the same period of time.

15 Again the income is represented on the left-
16 hand side and the time across the bottom.

17 These are done in individual weeks.

18 Q Weeks rather than five-week periods?

19 A Yes, sir.

20 Q So the numbers along the bottom are weeks, and the
21 vertical lines in between represent individual weeks?

22 A Yes, sir, and the dotted line would represent the
23 electromechanical income.

24 Q The solid line the electronic?

25 A Yes, sir.

1 Q The same explanation holds for all 21 pages of Exhibit
2 379?

3 A Yes, it is just for various locations and for various
4 lengths of time.

5 Q Will you now look at Plaintiff's Exhibit 380 and tell
6 us what that consists of?

7 A 380 is really the numerical report which Exhibit 379 is
8 derived from. It breaks out and gives the individual dollar
9 amounts for the equipment charted. The report gives, one,
10 the serial numbers on the far left side, the location that
11 it was in, its installation date in the next column, and then
12 takes in weekly increments, compares the two head to head on
13 how much revenue was generated on both machines.

15 Q When were Plaintiff's Exhibit 378, 379, and 380 prepared?

16 A They were prepared back in 1976.

17 Q At the time this test project was concluded?

18 A Well, most of the income was fed on an ongoing basis,
19 so there were various reports. They would be updated with new
20 income.

21 The final report we have here would be a
22 determination of the test program.

23 Q For what purpose were they prepared?

24 A To see what the viability of an electronic pinball
25 machine would be actually out in the street on site in a

1 real-life situation.

2 Q Were these reports delivered by the person who prepared
3 them or under whose supervision they were prepared to a
4 higher level of supervision or management in Bally?

5 A Yes, sir.

6 Q Who prepared them?

7 A The maintenance of the income as it came in was under the
8 guidance of the marketing department. The actual reports
9 were then put into these formats by Frank Bracha.

10 MR. TONE: If the Court please, I offer Plaintiff's
11 Exhibits 378, 379, and 380 in evidence.

12 THE COURT: They will be received.

13 MR. GOLDENBERG: Your Honor --

14 THE COURT: Mr. Goldenberg?

15 MR. GOLDENBERG: I think we do object to these
16 documents. During the course of discovery in this proceeding,
17 we submitted many document requests which would have called
18 for the production of these documents. They were never pro-
19 duced to us.

20 We asked for test results. We asked for all
21 kinds of documents pertaining to the development of this pro-
22 duct and its entry into the market, and they were not produced.

23 THE COURT: You didn't get this?

24 MR. GOLDENBERG: No, sir, we did not.

25 MR. TONE: Your Honor, I am not able to speak to

b1

a 1 Q Have these reports been maintained in the ordinary
2 course of business by Bally since they were prepared?

3 A I believe so.

4 Q Can you summarize the conclusion that you reached from
5 these field tests?

6 A We felt, after reviewing the 20 different locations over
7 an extended period of time, it showed very clearly that the
8 player's preference in the form of revenue generated was
9 clearly that of the electronic versus the electromechanical.

10 MR. TONE: If the Court please, I offer Plaintiff's
11 Exhibits 378, 379, and 380 in evidence.

12 THE COURT: They will be received.

13 MR. GOLDENBERG: Your Honor --

14 THE COURT: Mr. Goldenberg?

15 MR. GOLDENBERG: I think we do object to these
16 documents. During the course of discovery in this proceeding,
17 we submitted many document requests which would have called
18 for the production of these documents. They were never pro-
19 duced to us.

20 We asked for test results. We asked for all
21 kinds of documents pertaining to the development of this pro-
22 duct and its entry into the market, and they were not produced.

23 THE COURT: You didn't get this?

24 MR. GOLDENBERG: No, sir, we did not.

25 MR. TONE: Your Honor, I am not able to speak to

1 that. I will ask Mr. Katz what he knows about it.

2 MR. KATZ: Your Honor, various documents were pro-
3 duced, and in fact I think the defendants took the deposition
4 of at least one witness with respect to this.

5 This is the first I have known that they have
6 any objection. In other words, this material was produced
7 earlier to the defendants before the start of this trial.

8 MR. TONE: We delivered it to them before the trial.

9 MR. KATZ: I haven't heard any objection, except
10 right now.

11 THE COURT: When was it prepared?

12 MR. TONE: The witness said it was prepared at the
13 time the studies were made, your Honor, not for purposes of
14 the case.

15 MR. GOLDENBERG: Your Honor, we did get some -- I
16 don't know what to call these things -- showing comparative
17 money earned or something documents, but we never saw these.

18 MR. KATZ: We gave you summaries, I know.

19 THE COURT: Why weren't these produced? That is
20 the question.

21 MR. KATZ: I didn't know of their existence.

22 THE COURT: Why weren't you told?

23 MR. KATZ: I don't know, your Honor. I would have
24 to check into it.

25 As I said, this is the first time Mr. Goldenberg

has raised this objection with respect to these documents.

MR. GOLDENBERG: Your Honor, it is the first time they have come into the case and we have had to deal with them.

THE COURT: Well, I am wondering whether it makes much difference. I sense that maybe both sides agree that electronic machines have taken over the marketplace.

That is what this demonstrates, or purports to demonstrate.

MR. GOLDENBERG: No, I don't think so.

THE COURT: Is there a big argument about it?

MR. LYNCH: There isn't, your Honor.

Maybe in cross examination -- I just don't know the parameters of the tests. I don't know what was in these arcades. I don't know, for example --

THE COURT: I will reserve ruling until completion of the cross examination.

MR. TONE: Very well, your Honor.

THE COURT: Are you about to finish with direct?

MR. TONE: No, I am not, your Honor. I have --

THE COURT: All right, then let's take a recess now.

MR. TONE: -- quite a bit more.

THE COURT: Take a ten-minute recess.

MR. TONE: Very well.

1 (Brief recess.)

2 MR. TONE: Mr. Nieman, will you resume the stand.

3 THE COURT: Please be seated.

4 BY MR. TONE:

5 Q I show you, Mr. Nieman, Plaintiff's Exhibit 75, and I
6 ask you whether you recognize it.

7 A Yes, sir. I do.

8 Q Can you tell us where it came from, what files or
9 records?

10 A It was issued by Bill O'Donnell, Jr., and dated
11 June 22, '76. At that point in time Mr. O'Donnell was in-
12 volved in the marketing department at the Bally Manufacturing
13 Corporation.

14 It appears to be a memo that he issued to his
15 father.

16 Q Who is his father?

17 A His father is William --

18 Q What role did he hold?

19 A I am sorry.

20 Mr. William T. O'Donnell, Sr., who was at that
21 point president and chairman of the board of Bally Manufac-
22 turing.

23 Q Was this document made and maintained in the regular
24 course of business by Bally?

25 A Yes, sir. It was.

1 Q Did Bally sell pinball games in France?

2 A Yes, sir. They did.

3 Q In 1976 did it begin to distribute electronic pinball
4 games in France?

5 A Well, with production to third parties occurring in
6 the fourth quarter of '76, without checking the files, I
7 would assume France would have been shipped from initial
8 production of electronic games and probably would have re-
9 ceived a shipment prior to '76 if not January '77.

10 THE COURT: Mr. Lynch.

11 MR. LYNCH: Your Honor, I object on grounds of
12 hearsay. This is the report of Mr. Santa Maria to
13 Mr. O'Donnell. It is being introduced for the truth of
14 what is alleged by Mr. Santa Maria.

15 THE COURT: Well, that is true, but I assume it
16 would come under the business records exception if we agree
17 that it is a document prepared in the ordinary course of
18 business. Now, it was not prepared by this witness, but
19 Mr. O'Donnell would be the one to say that, I guess.

20 MR. LYNCH: I do not think Mr. Santa Maria was
21 an employee.

22 MR. TONE: No. Mr. Santa Maria, as I understand
23 it, was a distributor.

24 THE COURT: Well, it does not make any difference.
25 If it is a business record, it can contain hearsay within it.

MR. TONE: That is correct, and I was about --

THE COURT: As long as it is in the ordinary course of business to write such memoranda.

MR. TONE: Right. If it is necessary to do so, I can call Mr. O'Donnell, Jr.

THE COURT: Do you understand my point, Mr. Lynch?

MR. LYNCH: Well, may it please the Court --

THE COURT: It can contain third-hand hearsay as business records often do. The question is is it a record made in the ordinary course of business under circumstances that tend to indicate reliability.

1 MR. LYNCH: May it please the Court, your Honor,
2 it only contains hearsay.

3 This is an interdepartmental memorandum, not
4 a report; just correspondence within Bally --

5 THE COURT: I understand that. But isn't it the
6 kind of document that a business would use to govern its
7 affairs? I mean, here they're being told by somebody that
8 something is beneficial to the business, and so Mr. O'Donnell
9 says, "Let's act on this information," or at least he's
10 passing on the information with that in mind.

11 There's an authenticity problem -- now, wait.

12 O'Donnell is with Bally?

13 MR. TONE: Yes.

14 THE WITNESS: Yes, sir.

15 THE COURT: All right. Then this is a document
16 made in the ordinary course of Bally's business. And the
17 only question is whether the fact that it contains this hear-
18 say from Santa Maria makes it inadmissible; and it doesn't,
19 in my view.

20 So I'll overrule the objection.

21 MR. TONE: All right.

22 BY MR. TONE:

23 Q Just to complete the foundation: Your name is among
24 those who are shown to have received copies of this document.
25 Did you receive a copy?

1 A Yes, sir, at that time I did.

2 Q At that time being late June 1976?

3 A Yes, sir.

4 Q And who was Mr. Santa Maria?

5 A Mr. Santa Maria is -- was, is -- was and is president
6 of Bally's distributing subsidiary in France, and is an em-
7 ployee of the corporation.

8 Q Oh, he is an employee of the corporation.

9 A Yes, sir. It's a subsidiary of the corporation, and he
10 is president.

11 Q Then my earlier remark was inaccurate in that respect.

12 A Yes, sir, it was.

13 MR. TONE: I think I offered it, your Honor, and I
14 think -- I think I did not offer it; that Mr. Lynch raised
15 his point before the actual offer.

16 So just to complete the formality, I'll offer
17 the exhibit.

18 THE COURT: It's received over objection.

19 (Plaintiff's Exhibit No. 75 received in evidence.)

20 BY MR. TONE:

21 Q You said earlier, Mr. Nieman, that -- in response to my
22 question of what you meant when you spoke of market acceptance
23 or an equivalent term, that you referred both to the players
24 and the arcade operator, and you told us about player
25 preference.

1 What can you say with respect to the attitude
2 of arcade owners who bought the games from Bally or its dis-
3 tributing subsidiary, with respect to electronic versus
4 electromechanical pinball games?

5 A Well, the operator, which would include both an arcade
6 owner or a street operator who places equipment in various
7 locations -- it might not be an arcade, but it would be a
8 location where you would have two or three pieces of equip-
9 ment -- those operators indicated to us a preference in the
10 electronic format pinball machine, motivated, I feel, by
11 both the revenues that were generated within the machine
12 comparative to electromechanical, and the maintenance factor
13 contained on the equipment.

14 MR. LYNCH: Once again I object on hearsay, your
15 Honor. Indications of operators unidentified.

16 MR. TONE: Well, as to that, your Honor -- does
17 your Honor wish to hear me on the point?

18 THE COURT: Yes.

19 MR. TONE: As to that, Mr. Nieman was in charge of
20 marketing pinball games and was an expert in the marketplace.
21 And I think he is qualified to speak based on that experience
22 as an expert concerning the attitudes of the customers of
23 Bally who bought the machines.

24 It is true that that kind of information is --
25 marketing information, consumer preferences and purchaser

1 preferences -- is necessarily based on hearsay. But it's a --
2 it's nevertheless something that one has to learn when he's
3 in that position.

4 THE COURT: You're saying that this comes under
5 the rule that says that an expert can testify based on informa-
6 tion of the kind generally relied upon by experts.

7 MR. TONE: Yes, your Honor.

8 THE COURT: That seems reasonable to me. I'll over-
9 rule the objection.

10 BY MR. TONE:

11 Q During the period 1974 through 1982, Mr. Nieman, who
12 were Bally's principal competitors in the manufacture and
13 sale of pinballs?

14 A The principal competitors in the manufacture and sale
15 of coin-operated pinball equipment would have been
16 D. Gottlieb & Company and Williams Electronics.

17 Q Unless I indicate otherwise I mean to refer to coin-
18 operated pinball games.

19 A Yes, sir.

20 Q Do you know during that period how those three companies
21 ranked in sales with respect to coin-operated pinball
22 machines, during the period up to 1976?

23 A Well, the actual sales numbers from the different
24 manufacturers have never been available to a single source
25 to actually assess each manufacturer's individual market

share. are showing now of your recollection and up to at

But in the responsibility of the sales and marketing of the product one has to be in almost constant communication and flow with the marketplace, the operators, and the distributors, and through that I had a perception of where the three manufacturers ranked, if you will, as far as their different market shares. was shown numbers by counsel

Q Through that you had formed an opinion as to the ranking of the three manufacturers?

A Yes, sir. attention to Plaintiff's Exhibits 84, 89-A

Q And what was that opinion?

A Well, in 1974 I think it was clearly D. Gottlieb & Company was the dominant, number one manufacturer of coin-operated pinball equipment, and probably have held that other position since the inception of production for them.

Based upon At that point I think Bally and Williams would have been closer to each other in actual sales, with Williams probably holding an edge, which would put Williams number two and Bally number three.

A Yes, sir, when we got these numbers, if you will, they were production numbers and not sales numbers, we then pulled the Bally production numbers for those various years to give in a comparable figure and then did a comparable year, showing the three different manufacturers for each of those years from '74.

1 Q We are speaking now of your perception and opinion at
2 the time in the particular years in question, right?

3 A Yes, sir.

4 Q Have you since had access to actual figures of production
5 of pinball machines by manufacturers other than Bally, speci-
6 fically Gottlieb and Williams?

7 A Yes, sir, just recently I was shown numbers by counsel
8 of the two other manufacturers, comparing all three factories
9 from '74 through '81 or '82.

10 Q I call your attention to Plaintiff's Exhibits 89, 89-A
11 and 90.

12 Are those the figures to which you refer?

13 A Yes, sir, I was shown by counsel these documents as
14 representative of the manufacturing numbers from the two other
15 manufacturers, production numbers.

16 Q Based upon these numbers and the statistics for Bally
17 with respect to pinball games, did you prepare a chart
18 summarizing production totals for the three manufacturers
19 during the period 1974 to 1981?

20 A Yes, sir, when we got these numbers, because they were
21 production numbers and not sales numbers, we then pulled
22 the Bally production numbers for those various years to give
23 us a comparable figure and then did a comparative memo,
24 showing the three different manufacturers for each of those
25 years from '74.

Q Did you then compare the Bally production numbers with the Bally sales numbers to see that they correlated with one another?

A We compared the two, yes, just to see that there was no great variances. It would be impossible to -- Ideally a manufacturer only builds exactly what he can sell, but in any given year the production number and the sales number might not necessarily correlate exactly.

We were looking for --

Q That is because obviously machines built toward the end of a particular year would probably be sold in the beginning of the following year.

A That is true.

Q So they would appear as production in one year and sales in the next year, right?

A That is true.

Q What did you find when you correlated Bally's production numbers and sales numbers?

A What we didn't find is any great variance that might have indicated that either one of the numbers were off tremendously. They were all within a range of each other that seemed reasonable.

Q Was there a reason for showing in the comparison you made production totals rather than sales totals?

A Yes, sir, because we didn't get sales figures. Counsel

1 never showed me sales figures from the other manufacturers.
2 They only showed the production numbers.

3 To make it comparable in figures, we then went
4 back and pulled the production numbers for those individual
5 years. So we all had production figures across.

6 Q In order then in comparing Bally's sales with the sales
7 of Gottlieb and Williams, you would compare the same data,
8 right?

9 A I can't compare Bally's sales to anything because I
10 haven't been given sales figures per se for those factories.
11 I was only given production.

12 Q Since you only had production figures, you converted
13 Bally's or you assembled Bally's figures as production figures
14 and used those in your table, right?

15 A I didn't convert them, sir. I found the production
16 numbers.

17 MR. TONE: Would the reporter read back that
18 answer?

19 A (Read by the reporter.)

20 BY MR. TONE:

21 Q I show you Plaintiff's Exhibits 381-A and 381-B, and I
22 ask whether 381-A is the table that you have been testifying
23 about which you prepared from the production statistics for
24 the three companies?

25 A Yes, sir, this is the comparison that I worked with

with counsel in preparing the individual year production numbers for the three factories and indicating whether it was electromechanical production or electronic production.

Q At our request did you also prepare a graph in which you showed graphically the statistics that appear on Plaintiff's Exhibit 381-A?

A I don't have it.

Q I think I handed you both.

A Really?

No.

Q Here it is.

MR. TONE: Read the question back to the witness.

Q (Read by the reporter.)

BY THE WITNESS:

A Yes, sir, in cooperation with counsel, we made a very simple line graph, using the numbers generated in 381-A and produced what is indicated as 381-B.

BY MR. TONE:

Q Are the production totals shown in 381-A an accurate relection of the underlying data you testified about having received from Gottlieb and Williams and the information obtained from Bally's records?

A Yes, sir.

1 Q Looking at 381-A, what was the ranking of the three
2 manufacturers before the introduction of electronic pinball
3 games?

4 A Well, if you take 1974 as the year prior to the intro-
5 duction of electronics, Gottlieb was, in fact, the largest
6 manufacturer in production quantities. Williams was, in
7 fact, second, and Bally was third.

8 Q Actually, 1975 was the year before the introduction?

9 A That was the immediate year before introduction of
10 electronics.

11 Q All right.

12 A The same ranking applied there with respect
13 to Gottlieb, but Bally had moved up to about a tie with
14 Williams in '75, right?

15 A Within approximately 500 units of Williams. It had
16 just edged into the number two position.

17 Q Then '76 was the year in which a trickle of electronic
18 machines was introduced by Bally, right?

19 A Yes, sir.

20 Q The production ranking of the three companies was about
21 the same in 1976?

22 A According to the numbers that we could generate, it
23 appeared to have flopped back to Gottlieb again in the
24 dominant number one position. Williams just eked out Bally
25 in 1976, and Bally was in the number three position again.

1 Q Then can you tell us generally what is shown for the
2 years 1977 and 1978?

3 A Well, Bally then began to move in its market share, and
4 its total number of units projected it into the number one
5 position.

6 Q Turning now to 381-B, which graphically portrays the
7 information contained on 381-A, is it correct that the dotted
8 line represents electromechanical games?

9 A Yes, sir. That is the total for all three manufacturers'
10 electromechanical production.

11 Q The solid line represents electronic games?

12 A Yes, sir, for all three manufacturers.

13 Q It shows, as does 381, that eventually electronic games
14 displaced electromechanical games?

15 A Yes, sir.

16 Q That occurred -- strike that.

17 I notice that according to 381-B, beginning
18 in 197 -- 1980, I guess --

19 I am looking at 381-A. It would appear that
20 the trend began in 1980 and accelerated rapidly in 1981 in
21 the reduction of the number of pinball games shown, right?

22 A Yes, sir, 19 --

23 necessarily --

24 You are referring to the fact that the video games in 1981 --

25 generated games --

9--1 Q In other words, the market turned down sometime in 1980?

2 A Yes, sir. It began to erode late 1979, and through
3 1980, '81, and into '82, the pinball market continued to
4 decline.

5 Q Do you have an opinion based on your marketing experience
6 as to the reason for that decline?

7 A Well, I think there are two factors involved.

8 One, with the introduction of electronics, you
9 then had the entire electromechanical pinball population to
10 replace. That replacement or displacement took place starting
11 in '77, occurred in '78 and through '79. A natural phenomenon
12 would have been for eventual, after the entire act of pinball
13 population had been repaced with electronic pins, you would
14 then only be in a replacement market, and the numbers would
15 naturally be smaller.

16 I think that downturn was sharpened by the
17 introduction of the video boom started in 1979 with the
18 video game, Space Invaders. It just heightened or quickened
19 what was to be a natural occurrence of the market being
20 saturated with electronic pins and then only replacing them.
21 But it was quickened with the video boom took off, and
22 immediately they were not replacing electromechanical pins
23 necessarily with electronic pins but with video games.

24 Q You are referring, of course, to the video boom in coin-
25 operated games?

1 A Yes, sir. I am.

2 Q Are you aware of any reason for the change in Bally's
3 share of the electronic -- of the pinball machine market, not
4 the electronic -- but are you aware of any change -- the
5 reason for the change in Bally's share of the pinball machine
6 market other than the introduction of electronic games?

7 A I think Bally did many good things to affect the sales
8 of pinball equipment. Predominantly, the best thing it did
9 was convert into electronics when it did and look as the first
10 manufacturer to offer it in electronic format.

11 Additionally, it was very aggressive in its
12 marketing programs.

13 Q Did Bally devote substantial resources to the promotion
14 of electronic pinball before the games had demonstrated their
15 success?

16 A The additional revenues or budgets that grew compara-
17 tively really followed on the success of the electronic pin
18 rather than preceded it.

19 With the increase in sales, more money was
20 spent in advertising. More money was spent in promotional
21 activities, and more money would be spent in trade shows based
22 on previous sales. As the sales rose, the moneys available
23 for those activities also increased.

24
25

1 MR. TONE: Excuse me, your Honor, for the interrup-
2 tion.

3 BY MR. TONE:

4 Q Was there a company in the market called Stern Electronics
5 or Stern Manufacturing Company?

6 A Yes, sir, there was.

7 Q And prior to the introduction of electronic games were
8 they selling pinball machines in any substantial numbers?

9 A There's a time period here, and I'm not quite sure --
10 they bought a company, Chicago Coin, which had been manufac-
11 turing pinball equipment.

12 Stern moved into the marketplace and acquired
13 this company, and then started to manufacture them under the
14 name Stern.

15 The exact time of that changeover -- they
16 were in the marketplace prior to our release of electronic
17 pins, yes.

18 Q Was Chicago Coin a major factor in the market or rela-
19 tively small factor?

20 A Well, they were certainly smaller than Bally, and Bally
21 was in a third position.

22 I think they would have been regarded by the
23 other three manufacturers as a small element in the market-
24 place.

25 Q Did Chicago Coin make electronic pinball games?

- 1 A Not to my knowledge, no, sir.
- 2 Q And electronic games were made by Stern after Stern
- 3 took over?
- 4 A Yes, sir.
- 5 MR. TONE: If the Court please, I offer the fol-
- 6 lowing exhibits -- and a couple of them I may have offered,
- 7 but I'm not quite sure, so I'm going to state them again:
- 8 Plaintiff's Exhibits 382, 381-A and B, 89, 89-A and 90.
- 9 THE COURT: Does that include the ones that I re-
- 10 served judgment on?
- 11 MR. TONE: It does include the one you reserved
- 12 judgment on --
- 13 THE COURT: All right.
- 14 MR. TONE: -- and I'm offering it, but I understand
- 15 your Honor will not rule until after the cross.
- 16 THE COURT: All right. I'll receive them --
- 17 Yes, MR. TONE: That concludes the direct -- oh, wait
- 18 a minute --
- 19 THE COURT: -- and reserve ruling on the ones I
- 20 indicated.
- 21 (Brief interruption.)
- 22 MR. TONE: No further direct, your Honor.
- 23 CROSS-EXAMINATION
- 24 BY MR. LYNCH:
- 25 Q Mr. Nieman, you said you've been involved with Bally

1 and marketing of pinball machines since at least about 1974.

2 Correct, sir?

3 A '74, yes, sir.

4 Q I show you -- I show you an article that's reproduced
5 from a 1975 edition of Replay.

6 Have you ever seen that article, Mr. Nieman?

7 A No, I don't remember back in '75, if in fact I read this
8 article.

9 Q You're quoted in the article, Mr. Nieman, on the second
10 page, bottom of the left-hand column.

11 Did you in fact make those comments,
12 Mr. Nieman?

13 A Again, being in the year 1975 -- I would assume I spoke
14 with the magazine and they've assigned some quotes to me.

15 Whether I said it word for word as it reads,
16 it would be difficult under oath to say yes, I did.

17 Q Yes, but back at that time in 1974, Mr. Nieman, you did
18 have the opinion and you did communicate to people in the
19 industry words essentially conveying that Bally would be
20 putting its head in the sand if they didn't research the
21 possibilities of solid state pinball games. Correct?

22 A Do you mind if I read the article?

23 Q Not at all.

24 A Just my quote. (Witness reading article.)

25 Could you ask the question, sir?

1 Q You have no doubt you made a comment of that nature, do
2 you, Mr. Nieman?

3 A Again, I would assume, quoted like this, and that many
4 years ago -- again, I can't swear that those words were mine --
5 but something of that nature probably was said.

6 Q You don't disagree with that, do you, at this point in
7 time, Mr. Nieman? That Bally would have been putting its
8 head in the sand to ignore solid state possibilities in
9 traditional pin games?

10 A No, I wouldn't disagree with that.

11 Q And furthermore, you indicated that at this time in 1975
12 Bally had been researching solid state possibilities in pin
13 games for more than a year, correct?

14 A It says that, yes.

15 Q Don't you recall that in fact in 1974 Bally began and
16 commenced researching possibilities for solid state pin games?

17 A It's my understanding that Bally had made a commitment
18 towards electronic pinballs, and it took quite some time to
19 bring the whole project to fruition.

20 And to come to fruition and to build a proto-
21 type in early 1976, I would imagine that the process had be-
22 gun some time prior.

23

24

25

Q Now, you also mentioned that you were wor -- or the article indicates:

"Nieman, too, is worried about serviceability

He feels that service problems and education lags brought on by video games still exist and those problems could be compounded by the introduction of a digital pin game."

Do you recall the fact that as a marketing individual, you were concerned about serviceability of electronic pin games in 1974?

A Yes, sir, I would say as a marketing person serviceability is always a concern.

Q The serviceability concern was caused by the fact that you knew and the other pin game manufacturers knew, did they not, that the arcade operators were not really up to speed on solid state electronics, correct?

A I would say that it was brought on by the fact that it is an educational process, and I certainly didn't understand it. My concern was that if it wasn't presented and educated in the proper format, you might have a problem if they did not learn how to work on the equipment.

Q The idea, though -- by whom is the service done on a machine that is in disrepair in an arcade?

A It is done by a service technician.

Q Your concern was that those service technicians might

not be able to, without an educational process, service these new games, correct?

A. That is true.

Q. They had been servicing electromechanical games for a long time and were familiar with such games, correct?

A. That is true.

Q. During the time period --

MR. TONE: Excuse me, Mr. Lynch. May I inquire? The copy of the exhibit from the magazine which you gave us doesn't bear a date.

Can you help us with that?

MR. LYNCH: It is sometime in 1975. It is a "Replay" magazine from '75.

I have been looking for the original.

MR. HARDING: I believe it is July of 1975.

MR. LYNCH: We believe it is July 1975.

I have been trying to get the original "Replay" magazine, your Honor.

I believe the document was produced by Bally. I think it was.

MR. TONE: Thank you.

MR. LYNCH: There is a Bally production number on it.

BY MR. LYNCH:

Q. Now, you testified about Exhibit 88, which I place before

1 you.

2 Mr. Nieman, Exhibit 88 contains the sales of
3 Bally pinball machines by year, extending back to 1974,
4 correct?

5 A Yes, sir.

6 Q In 1974, '75, and '76, those are all -- electromechanical
7 games don't bear a -- let's just put it that way.

8 Electromechanical games do not have an asterisk
9 in front of them?

10 A For the purposes of this report, we asterisked the
11 electronic games. So it is safe to assume --

12 Q The microprocessor-controlled games?

13 A The electronic formatted pin games. So ones without
14 asterisks would be electromechanical format games.

15 Q There are wide variations in the sales of games from
16 game to game, Mr. Nieman, is that correct?

17 A It depends what you mean by "wide."

18 Q Let's take as an example the electromechanical game
19 Captain Fantastic, sold in 1976.

20 THE COURT: What exhibit is this?

21 MR. LYNCH: 88, your Honor. It starts with a letter
22 from Welsh & Katz.

23 MR. TONE: That is an electronic game, Mr. Lynch.
24 That correction was made on Exhibit 88.

1 BY MR. LYNCH: Now, let's take, for example, then Evil Knievel.

2 Q Well, let's take, for example, then Evil Knievel.

3 No, I am sorry. I could not hear the name.

4 Was Captain Fantastic an electromechanical
5 or an electronic game?

6 A In the coin-operated version it was electromechanical.
7 In the home version it was electronic, and it was produced
8 both ways under the same name.

9 Q I see. The home version is a four-player game with four

10 A It is indicated twice, one with the home indication
11 afterwards, at the lower--

12 Q I see. So then I do want you to refer to Captain
13 Fantastic in the pin-operated--only be played by one person

14 A Coin-operated.

15 Q -- I mean the coin-operated version. the size of the
16 run. Now, that sold 14,685 versions or machines
17 in 1976, correct?

18 A That is correct, sir. would have larger production

19 Q Other machines in that same year did not sell as much?

20 A That is correct, sir. the individual model that you

21 Q From a marketing perspective, how do you account for
22 that?

23 A It was probably two obvious factors. sales for that

24 In 1976 in the electromechanical we were
25 still building games in the various electromechanical formats.

1 One we call a single-player game, two, a two-player game,
2 and three, a four-player game.

3 As an example, I could indicate on the ma-
4 chines you have here in the courtroom.

5 Q These are two-player games?

6 A The Flicker game would be a two-player game, which means
7 it holds two scores simultaneously and two people can play
8 simultaneously.

9 The Hot Tip is a four-player game with four
10 scores.

11 In the electromechanical we additionally
12 made what we called a single player, which would only have
13 one player indication and could only be played by one person
14 at a time.

15 That alone would indicate the size of the
16 run. Single players sold a certain segment, two players
17 another. The most popular, of course, was the four-player
18 models. So they naturally would have larger production
19 runs.

20 Secondly, the individual model that you
21 pointed out was a game in which an extensive amount of
22 promotional activity was involved around that particular
23 game, and it, I think, reflected additional sales for that
24 year.

25 Q But game success depended on game play features, did

1 it not? the sold 351 games.

2 A Game play features are certainly a facet as to whether
3 a game is successful or not. other years, it can be --

4 Q If, for example, you would compare in 1976 Hocus-Pocus
5 and Old Chicago, one sold twice as much as the other. was pro-

6 A Q I show Old Chicago at 7,140, and I show Hocus-Pocus at
7 3,001. earnings capability indicated it was not a game capable

8 or should not be. Again recalling as best I can, I believe: Q
9 Hocus-Pocus was a two-player game. Old Chicago was a four-
10 player game. not have the player appeal, correct?

11 A It did not. So initially a four-player game would have
12 a larger marketing segment that it would appeal to, and our
13 four-player runs were typically larger than two-player or
14 single player runs. a number of play features that were in-

15 Q Refer then to 1979, two electronic formatted games, as in
16 Star Trek and Voltan. Compare those two.

17 A It is my Star Trek sold about 16,000? with the use of a
18 A Yes, sir. can achieve certain play features he had not
19 prior to achieved in electromechanical.

20 Q Those play features include, for example, playfield
21 lighting, correct?

22 A Yes, sir.

23 Q They include a high score to date on the machine,
24 correct?

25 A That is my understanding, yes.

1 Q Voltan sold 351 games.

2 A I am sorry. I show 346.

3 Q I think if you add the other years, it comes --

4 A Okay.

5 Voltan was only prototyped. It was never pro-
6 duced. The prototype run was built -- was put out. Its
7 income-earning capability indicated it was not a game capable
8 or should not be built. It did not have the appeal necessary
9 to go into production.

10 Q It did not have the player appeal, correct?

11 A It did not have the income earning potential.

12 Q If you were to compare these electromechanical games
13 with the other games, the later electronic games, isn't it a
14 fact that there were a number of play features that were in-
15 corporated in electronic games that were not incorporated in
16 the electromechanical games?

17 A It is my understanding that a designer with the use of a
18 microprocessor can achieve certain play features he had not
19 prior to achieved in electromechanical.

20 Q Those play features include, for example, playfield
21 memory, correct?

22 A Yes, sir.

23 Q They include a high score to date on the machine,
24 correct?

25 A That is my understanding, yes.

Q What other play features can be incorporated using a microprocessor that was never incorporated in electromechanical games?

A Well, it is a matter of what you call features. Personally, I call sound and visuals part of the game play features.

Q It is a fact, isn't it, that the electromechanical games had thumps and chimes and bells, correct?

A Mechanically produced chimes and what we call a kicker, which I think is what you meant by thump.

Q A kicker, yes.

Q The solid state games could reproduce what might be referred to as space age sounds, correct?

A Today they do, not initially. They pretty much mimicked the electromechanical initially but today produce a far more sophisticated range of sounds and music.

Q So across the spectrum of the games that are reflected in your summary, there are a number of new game features that were incorporated, correct?

A Typically a game would have a varying number of features from one model to another, some of them more popular than others.

Q Even right at the beginning the new solid state games incorporated lit-up displays as opposed to real displays, correct?

A That is correct, sir.

1 Q They incorporated things like playfield memory and high
2 score to date, isn't that correct?

3 A Not initially. Those features evolved into the electronic
4 pin.

5 Q They were not present in the early electronic pins?

6 A Well, the first playfield to my knowledge that had memory
7 recall was a game we built called Eight Ball, and that was
8 built -- well, I will tell you when.

9 (Brief interruption.)

10 BY MR. LYNCH:

11 Q Now, during --

12 A Eight Ball -- I am sorry.

13 THE COURT: He had not finished his last answer.

14 THE WITNESS: Eight Ball was sold in '77 and '78.
15 So it was probably a good 12 months after the first electronics,
16 before a designer exploited, if you will, that capability of
17 the machine.

18 BY MR. LYNCH:

19 Q Let me show you Exhibit 12-L, Mr. Nieman.

20 Defendants' Exhibit 12-L is a summary of Bally
21 Manufacturing Corporation's selling and general administrative
22 expenses.

23 I want you to focus on the fourth row, adver-
24 tising and promotion expenses.

25 That reflects that in 1977, '78 and '79, '77

1 being the first year involving major sales of electronic pin-
2 ball games, solid state pinball games or microprocessor-
3 controlled pinball games, that there was a substantial increase
4 in advertising and promotional expenses.

5 A According to this record, yes, it would.

6 Q Is that consistent with your memory, also, Mr. Nieman?

7 A Yes, sir.

8 Q Those promotional expenses increased through '78 and '79,
9 correct?

10 A According to this record, yes.

11 Q I show you what has been marked as Exhibit 12-E, an
12 advertisement which appeared, I believe, in late 1978 in
13 Replay magazine, the September 1978 Replay magazine.

14 Do you recognize Exhibit 12-E, Mr. Nieman, as
15 an ad of Bally Manufacturing Company?

16 A I have a feeling it is part of an ad because I doubt
17 if the verb is "Midway are number one." I think there was a
18 page here that said something prior --

19 Q I think it said, "Bally ad."

20 A -- to make it a verb with two nouns, to make Bally and
21 Midway, or something like that.

22 So there is another page. I think it is --

23 Q It is incomplete?

24 A It is incomplete, yes.

25 Q I want you to refer to the part you have before you,

Mr. Nieman, in the middle column. It indicates that this vertical integration -- well, it speaks about Midway Manufacturing and Bally Consumer Products Division both operating together, correct?

A. Can I read it?

(Brief interruption.)

(Brief interruption.)

BY THE WITNESS:

A Okay, I've read it, sir.

BY MR. LYNCH:

Q It indicates in that paragraph, referring to the Midway Bally consumer products combination, that quote: "This vertical integration is the competitive edge that accounted for Bally's market lead on major competitive pin manufacturers."

Correct?

A It says that, yes, sir.

Q Now, this vertical integration that is referred to here, can you explain that?

A I'm not sure -- I didn't write the copy.

Q Well, you are familiar with the organization and that vertical integration, are you not?

A Yes, sir.

Q And this is a marketing advertisement put out by Bally in a trade journal, is it not?

A It's an advertisement, and because it's put in a trade journal, it would be reviewed by the marketing department.

Q So Bally was promoting the fact that it did have this vertically integrated capacity, correct?

A Yes, sir.

Q And it at that time ascribed that vertical integration as being responsible for the success, correct?

1 A Yes, sir.

2 Q Now, at the same time, over the period 1974 through
3 1979 or '80, what did Bally do by way of integrating itself
4 further all the way into the arcades?

5 A What period, sir?

6 Q Beginning in 1974, 1975.

7 A And you're referencing what did Bally, the pinball
8 entity do?

9 Q What did Bally Manufacturing Corporation do?

10 A To -- why don't -- if you could repeat the question
11 again.

12 Q Yes. Commencing sometime in the mid-1970s did Bally
13 undertake to change or to acquire arcades?

14 A At some point in the '70s -- and again I can't reference
15 the exact time frame -- Bally acquired a small arcade operating
16 chain, and from that began to get into or expand the arcade
17 operations.

18 Q Now, that meant Bally actually owned the arcades where
19 these pinball machines were placed, correct?

20 A In those locations that were operated under Bally, yes.

21 Q And over the years from the mid '70s to the present has
22 Bally expanded the number of locations that it owns or arcade
23 locations?

24 A Again, sir, I can't -- you say mid '70s, and I'm not
25 sure what the time frame is for the original acquisition of

1 the first chain.

2 Q I show you what has been marked as Exhibit 12-P,

3 Mr. Nieman, a copy of the 1974 annual report of Bally.

4 MR. TONE: I don't think we have that, Mr. Lynch.

5 BY MR. LYNCH:

6 Q In 1974, I refer you to the third page of Exhibit 12-P,

7 Mr. Nieman, in the "President's Report to the Stockholders."

8 A Yes, sir.

9 Q In the middle column it indicates, about halfway down

10 the paragraph beginning "Bally continued to expand as an

11 operator of quality amusement centers, and acquired American

12 Amusement, Inc."

13 A Is that the first acquisition?

14 A That's the reference -- the arcade chain I was

15 referencing.

16 Q Now, it indicates that even prior to that Bally was an

17 operator because it indicates this was an expansion.

18 A Yes, sir.

19 Q So Bally was integrated all the way down to the arcade

20 level, correct?

21 A In 1974 when it acquired American Amusements, it moved

22 into the arcade operation business.

23 Q And do you know if during this time period D. Gottlieb &

24 Company ever integrated into the arcade business?

25 A I don't know of any operation by Gottlieb in the arcade

1 industry.

2 Q How about Williams?

3 A I'm not sure. I don't know of -- I've heard rumors to
4 the fact that they were looking at or doing some things, but,
5 no, sir, I don't know for a fact of any operation that is
6 owned by them.

7 Q Now, over the years from 1974 to the present Bally has
8 expanded its Aladdin's Castle and other arcade business, has
9 it not?

10 A Well, Aladdin's Castle is the arcade business.

11 Q I didn't know if they did it under any other names as
12 well.

13 A Well, Aladdin's Castle is a subsidiary name. They
14 actually operate under various names, but Aladdin's Castle
15 has more locations today than they did in 1974.

16 Q And over that time period hasn't Bally also gotten into
17 the business of amusement parks?

18 A Yes, sir. It's my understanding they acquired a company
19 that was involved in the operation of amusement parks.

20 Q Six Flags?

21 A I believe that's the name, sir.

22 Q That is also an outlet for the play of video games and --
23 all coin-operated games, is it not?

24 A Contained within those park environments are arcades.

25 Q How about the restaurant business?

1 A Bally acquired a chain of restaurants -- and again, the
2 year references I don't have, but it was recently -- in which
3 they are being, approximately seven or eight have been con-
4 verted to date to both restaurants and have game operations
5 contained within the restaurants.

6 Q One of the features of these types of restaurants is a
7 game arcade.

8 A A game arcade.

9 THE COURT: What's the name of it?

10 THE WITNESS: That chain is called Bally's
11 Tom Foolery.

12 BY MR. LYNCH:

13 Q Now, does Bally also operate routes in certain locations?

14 A Not that I know of, sir.

15 Q How about arcade game distribution, did Bally ever
16 undertake to do that?

17 A Bally has a subsidiary called Bally Distribution Company,
18 and its principal business is the distribution of Bally and
19 other manufacturers of coin-operated games to operators.

20 Q So Bally distributes, for purposes of the Court's under-
21 standing, not only its own games, but Gottlieb games and
22 Williams games. Is that correct?

23 A That's my understanding.

24 Q And Bally is one of the largest distributors in that
25 particular industry, is it not?

1 A That's my understanding.

2 Q Exhibit 12-E, the ad, mentions that, does it not? It
3 indicates that:

4 "It's all part of our outstanding worldwide dis-
5 tribution network, a network that puts you in
6 touch with the parts and the service you need
7 when you need them."

8 In the right-hand column.

9 A That -- I don't understand that as reference to the
10 distributing operation. That's reference to some of the
11 service available from Bally as a manufacturer directly to
12 operators.

13 It offers a toll-free number and a kit that
14 assists in the troubleshooting function of coin-operated
15 games.

16 THE COURT: Mr. Lynch, let's break at this point
17 for lunch. And we'll resume at 2:00 o'clock.

18 (Proceedings recessed from 12:15 p.m. to 2:00 p.m.)

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1 BALLY MANUFACTURING CORPORATION,
a Delaware corporation,

2 Plaintiff/Counterdefendant,

3 vs.

4 D. GOTTLIEB & CO., a corporation,
5 WILLIAMS ELECTRONICS, INC., a
corporation, and ROCKWELL INTERNATIONAL
6 CORPORATION,

7 Defendants/Counterplaintiffs.

) Docket No.
) 78 C 2246
)
)
)

) Chicago, Illinois
) January 9, 1984
) 2:30 p.m.
)
)
)

8 VOLUME V-B

9 TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

10 TRANSCRIPT ORDERED BY: MR. JEROLD B. SCHNAYER
11 MR. MELVIN M. GOLDENBERG

12 APPEARANCES:

13 For the Plaintiff:
Counterdefendant:

MR. KATZ
MR. SCHNAYER
MR. TONE
MS. SIGEL

17 For the Defendants/
CounterPlaintiffs:

MR. LYNCH
MR. HARDING
MR. GOLDENBERG
MR. ELLIOTT
MR. RIFKIN
MR. LEACH
MR. GOTTLIEB

21 Court Reporter:

22 LAURA M. BRENNAN
23 219 South Dearborn Street, Room 1918
24 Chicago, Illinois 60604
25

2
1 THE CLERK: 78 C 2246, Bally v. Gottlieb, case on
2 trial.

3 MR. LYNCH: May it please the Court, your Honor, I
4 have a book for the Court with all these exhibits in it.

5 THE COURT: Oh, good.

6 MR. LYNCH: There has been some concern expressed
7 by counsel that perhaps the Court would be left with some
8 exhibits that never get admitted. These, of course, were pre-
9 pared in advance and because of the nature of our case at this
10 time, we will ask the Court to skip around in them.

11 I will check with Mr. Martinez and make sure
12 that eventually the Court does not have anything that is not
13 evidence, but this might be helpful to you.

14 THE COURT: I promise you that I won't read any
15 schematics that are not admitted in evidence, and that if I
16 should do it inadvertently, it couldn't possibly hurt anything.

17 MR. TONE: All right.

18 MR. LYNCH: That, your Honor, if you will look at
19 the spine, defendants' exhibits are identified by those blue
20 stickers, and that is 10 to 16.

21 THE COURT: Fine.

22 MR. LYNCH: With all the little letters that accom-
23 pany each of the numbers.

24 THE COURT: Good. That will save us reaching over
25 the bench.

MR. TONE: We will have something like that, too, your Honor, when we get it organized. I wasn't quite sure how to put it together, and I was reluctant to do it until we had some exhibits admitted.

THOMAS S. NIEMAN, PLAINTIFF'S WITNESS, PREVIOUSLY SWORN.

THE COURT: Good afternoon.

THE WITNESS: Good afternoon.

CROSS EXAMINATION (Continued)

BY MR. LYNCH:

Q Mr. Nieman, when we left off, I was addressing the organization of Bally to some extent, and I believe you had referred to the 1974 annual report, which indicated to you that that was the time when the Aladdin's Castle acquisition by Bally was first made.

I believe it was American Amusements that became Aladdin's Castle, correct?

A That is correct, sir.

Q Those are arcade centers, correct, maintained in supermarket malls?

A Typically shopping center mall arcades, whose principal business is that of the operation of games.

Q 1975 there was an annual report, but I am going to refer you to 1976, Exhibit 12-R, Mr. Nieman.

In the 1976 annual report, Defendants' Exhibit 12-R, I would like to refer you to what appears to be the

1 fourth page of the exhibit, a part of Mr. O'Donnell's, or the
2 Chairman's, message to the stockholders.

3 In the left-hand column do you see a paragraph
4 Indicated "Equipment Operations"?

5 I am sorry --

6 A. The paragraph starts with that line?

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1 Q 12-R. I'm sorry. I want you to be on the third page,
2 on the third page of Mr. O'Donnell's report to the stock-
3 holders. 1978."

4 THE COURT: The third page starting with the one
5 with his picture on it? 1978. Isn't that correct?

6 MR. LYNCH: Yes, the one with his picture on it,
7 that very page, your Honor. 1978, the passage of 1978

8 BY MR. LYNCH: a major controlling aspect to the expansion

9 Q The President's Report to the Stockholders.

10 A I do not seem to see page numbers on this re-
11 production. That is my difficulty. 1978 or not, I am not sure.

12 A Okay, I think I have that. 1978, the passage of 1978

13 Q Do you have that? open up Chicago and New York?

14 A This page? I am not sure your term "major, and mine

15 Q Yes. 1978, the passage of 1978

16 THE COURT: In the first full paragraph in the right-hand
17 column, there is an indication that, "Marketing of flipper
18 pinball machines was added by the passage of local ordinances
19 in Chicago and New York," correct? 1978, the passage of 1978

20 MR. TONE: It is "aided." 1978, the passage of 1978

21 MR. LYNCH: "Aided." 1978, the passage of 1978

22 BY THE WITNESS: quantities into New York, 1978, the passage of 1978

23 A Yes. It says that:

24 "Marketing of our flipper pinball machines was 1978, the passage of 1978

25 1978, the passage of 1978

ordinances permitting their operation in New York City. Chicago passed a similar ordinance in early 1978."

Q Prior to the time of those ordinances, those two large markets were closed to pinball, isn't that correct?

A That is true, sir.

Q Isn't it a fact that, therefore, the passage of those ordinances had a major contributing effect to the expansion of the market in 1977 and 1978?

A They had an effect on the expansion of the market.

Whether the adjective, major, applies or not, I am not sure.

Q You are not sure as the marketing man for Bally whether it was major or not to open up Chicago and New York?

A Again, sir, I am not sure your term, major, and mine would necessarily agree.

THE COURT: Can you give us any estimate of the percentage of your sales which are in Chicago and New York?

THE WITNESS: It would be very difficult because the sale to a distributor in Chicago or New York does not necessarily mean that it will eventually be sold within those marketplaces. We probably sold equipment to a distributor in Boston who sold quantities into New York, also, and vice-versa. A New York ordinance was passed in 1977, I believe, regarding the sale of pinball machines. So it is difficult to measure what the impact opening had specifically. Both of them did, in fact, add

1 sales.

2 THE COURT: Just direct sales to Chicago and
3 New York?

4 THE WITNESS: I would not know the number offhand.
5 I could probably compute it, though, and have it available if
6 necessary.

7 BY MR. LYNCH:

8 Q Well, the fact of the matter is that the entire pinball
9 market, though, was expanded by the availability of these two
10 markets to all of the pinball manufacturers, correct?

11 A Certainly the marketplace was expanded and adding to
12 major metropolitan cities as far as where locations of equip-
13 ment could take place:

14 Q And that at least had a discernible impact?

15 A Certainly discernible would be applicable.

16 Q That impact was felt principally in 1977 and 1978?

17 A The Chicago ordinance was passed in '77 and impact in
18 '77 and '78 numbers probably, and the New York ordinance was
19 passed in '76. They both had an immediate impact on sales.
20 It would not be delayed for any reason.

21 Q Those two occasions coincided with Bally's introduction
22 of solid state pinball, correct?

23 A The New York ordinance was passed prior to our be-
24 ginning of sales of electronic pins. I believe we started
25 the fourth quarter '76, and I think the New York ordinance

Nieman - Cross

1 went through in May of '76, the spring, if not that month.

2 The Chicago ordinance, of course, in '77 --

3 we were, in fact, selling electronic pinballs.

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1 Q I'd like to refer you now to Exhibit 12-S, the 1977 Bally
2 annual report, Mr. Nieman.

3 I'd like to refer you to the fourth page of
4 that exhibit, by once again -- it appears to be page 2 down
5 in the lower left-hand corner, a very small 2 appears.

6 A I've got it.

7 Q This exhibit, Exhibit 12-S, the 1977 annual report for
8 Bally, referring to the "Equipment Operations" paragraph in the
9 left-hand column, indicates that your Aladdin's Castle was
10 expanding. Correct?

11 A Would you like me to read it?

12 Q It was expanding to 109 locations.

13 A Yes, sir.

14 Q Now, those locations, those Aladdin's Castle locations,
15 are locations that are run by Bally Manufacturing, correct?

16 A Yes, they're run by the management of Aladdin's Castle,
17 which is a subsidiary of Bally.

18 Q Now I'd like to refer you to the page marked 8 in Exhibit
19 12-S. At that point it indicates that:

20 "The success in '77 appears to be continuing
21 unabated in the first part of '78 due to technology."

22 And there there's a mention of electromechan --
23 the switch from electromechanical to electronic pinball
24 machines. Correct?

25 A Yes, sir.

1 Q It indicates that, "The Bally electronic machines offer
2 superior play appeal, providing more sophisticated scoring
3 systems and other unique features not previously possible."
4 Correct?

5 A Yes, sir, that's what it says.

6 Q Now, Mr. Nieman, it is possible for a player, playing a
7 pinball game, to discern the difference between an electronic
8 game and an electromechanical game. Is that not correct?

9 A Yes, sir, it is.

10 Q And when you did your Bow and Arrow analysis, as reflected
11 by documents 378 and 379, it was possible for the people
12 walking into the arcade to discern a difference between the
13 electromechanical Bow and Arrow and the solid state Bow and
14 Arrow. Isn't that correct?

15 A They would discern as long as they looked at the machines
16 and saw digital readouts versus mechanical drum numbers.

17 Q So there was a difference in the visual impact of the
18 game.

19 A Well, I'm not saying graphically they were different.
20 The art work on both machines were identical.

21 The only visual difference would be, one would have
22 the mechanical scoring reels, the other would have an
23 electronic digital readout.

24 Q And were there any other differences at all with respect
25 to the game?

1 A In respect to a player?

2 Q Yes.

3 A Perceiving a difference?

4 Q Yes. High score to date?

5 A I'm not sure that that feature had yet been put into the
6 machine.

7 As prototypes, it might not have carried all
8 the electronic features that would eventually become avail-
9 able. And I couldn't say for sure that it carried a high-
10 score -to-date.

11 Q Did it have an attract mode, other than just all the
12 lamps being lit?

13 A If you could define attract mode as how you call it --

14 Q Attract mode where the lamps would be cycled in some
15 type of pattern.

16 A I don't believe this machine carried that feature.

17 Q But there was a discernible difference, correct?

18 A Again, the displays would have been the keys --

19 Q If there was no discernible difference between the games,
20 what would you say would be the reason for the electro-
21 mechanical game receiving less play than the solid state game?

22 A I think there's a perceived feel of an electronic game
23 versus an electromechanical.

24 Because of the solenoids and the kickers and
25 their resetting coils in the electromechanical, it has more

1 of a vibrating mechanical type feel.

2 An electronic machine didn't have to have quite
3 all the hardware one had. And when it recycled, it didn't
4 have to kick up every one. It could return to a position and
5 the vibration factors, things like that, you could feel a
6 difference as you played the game.

7 The flipper assembly --

8 Q Well, did you think -- and this feel on the solid state
9 game was a better feel to --

10 MR. TONE: Your HONOR, I'm not sure the witness
11 finished his answer. It seemed to me he was interrupted.

12 BY THE WITNESS:

13 A I was -- the only other comment to make was, in the
14 flipper assembly itself, which is I think the most important
15 from a feel standpoint, because you're on those buttons and
16 that's how you activate the flipper and move the ball around,
17 the electronic machine seemed to be less vibration and a
18 smoother stroke when it hit the ball.

19 BY MR. LYNCH:

20 Q Seemed to be a smoother stroke?

21 A Yes.

22 Q And this created a preference in the players for the
23 solid state games?

24 A I think it's one of many elements again that obviously
25 caused the player preference because of an increased play

in revenues.

Q Well, what were those elements?

A Well, if we could define them in black and white, we'd have put them in every game, and every game would have been a rock solid hit.

Q Precisely. And in fact, was Bow and Arrow itself -- was Bow and Arrow itself -- a good game for Bally? The electromechanical Bow and Arrow?

A I think the electromechanical Bow and Arrow would have been considered a good game, in comparison to other games.

Q Can you refer to -- do you still have Plaintiff's Exhibit 88? an electromechanical Bow and Arrow game?

A No, I don't, sir.

Q I place before you Plaintiff's Exhibit 88. It appears that Bow and Arrow, if you refer to 1976, sold 2,666 games. Is that correct?

A Yes, sir. Bow and Arrow had been in that state for some period of time, correct?

A I am not sure. They had been in that state for some exact time was how far in advance. I am not sure.

Q But certainly with some of your 1976 games, Exhibit 88 and Exhibit 89, was introduced at the time of the 1976 Exhibit 89, certainly in some of your 1976 games, and I agree that the electromechanical 88 and 89 were put in there for some period of time prior to that time.

1 Q That is the least of any of the games brought out in
2 1976 appearing on that fourth page, correct?

3 A Yes, sir, on that fourth page, yes, sir.

4 Q On the third page it would appear that Bow and Arrow
5 sold less than every game, except perhaps the Freedom game.

6 A Yes, sir.

7 Q So it wouldn't appear that Bow and Arrow was an out-
8 standing performer for Bally?

9 A From a sales standpoint, no, sir.

10 Q At the time that the data of 379 was undertaken, that
11 data compares -- correct me if I am wrong, Mr. Nieman --
12 income from an electromechanical Bow and Arrow game with a
13 solid state Bow and Arrow game, correct?

14 A Yes, it is the electronic Bow and Arrow versus the
15 electromechanical Bow and Arrow.

16 Q At the time that the electronic Bow and Arrow was intro-
17 duced, the other Bow and Arrow had been in that arcade for
18 some period of time, correct?

19 A I am not sure. They had been in prior to, and what the
20 exact time was, how far in advance, I am not sure.

21 Q But certainly with some of those, because the electronic
22 Bow and Arrow was introduced all through 1976, as reflected in
23 Exhibit 79, certainly in some of those instances you would
24 agree that the electromechanical Bow and Arrow had been in
25 there for some period of time prior to that, correct?

1 A Well, the installation began of the electronic ones in
2 January through February and some were installed as late as
3 March.

4 Q Some were installed as late as October.

5 A I think the majority -- I am paging through quickly, and
6 I keep seeing Februaries.

7 I have no way of telling if the sale was in
8 front of or behind of, or they possibly both went in together.

9 Q Do you have any knowledge of how they were displayed?
10 Were they displayed one next to another?

11 A They were asked to be placed near each other for the
12 head-to-head comparison.

13 Q Yes, but do you know how they were placed in each of
14 these arcades?

15 A I did not visit the arcades, so I don't know.

16 Q The operators at each of these arcades, they knew this
17 was an electronic Bow and Arrow, didn't they?

18 A The majority of the locations are Aladdin's Castle
19 locations, which are corporate subsidiaries.

20 Q So they are corporate subsidiary locations, correct?

21 A They were part of the Aladdin's Castle chain and sub-
22 sidiary locations.

23 Q The operator then would know that this was a new solid-
24 state computer game, correct?

25 A He would know that he had a machine that was there on

1 test. It was a prototype machine.

2 Q But he would know that?

3 A The manager of the store would know that, yes.

4 Q And it is conceivable that he told the patrons that, too,
5 "This is a brand-new microprocessor computer game," isn't it?

6 A Conceivable, yes. I have no way of knowing.

7 Q You have no way of knowing, precisely.

8 How about Exhibit 378? Exhibit 378 compares
9 this new computer game, this new computerized Bow and Arrow
10 game placed in Aladdin's Castle with the general background
11 of all pin games in those units, correct?

12 A That is correct, sir.

13 Q The background of all the pin games in those units
14 would include games that were several years old, correct?

15 A I am not sure how old Aladdin's Castle kept equipment.
16 They usually rotated. They were considered fairly aggressive
17 in their purchases and attempted to maintain their rooms in
18 an up-to-date fashion, but the exact age of the balance of
19 the equipment I wouldn't know.

20 I would have to go back and look at the reports
21 and find out the individual piece and research when they were
22 installed or when they were purchased.

23 Q I see. So you don't know what the age cross-section --

24 A We felt it was representative of our case in the
25 United States.

Q As time progressed beyond Bow and Arrow, various of these other features referred to in the Bally 1977 annual report, 12-S, did eventually find their way into Bally games, isn't that correct?

A The play features I think we spoke of before, memory and recall, high score to date, features like that, eventually found their way into the designs of later Bally electronic formatted pinball machines.

Q We were referring to Page 8 of Exhibit 12-S, Mr. Nieman. That is the 1977 annual report.

Q Is it fair Could you turn to the next page, Page 9?

A Sir, is this the page?

Q I believe it is, sir, yes.

I just want to call your attention to the paragraph at the upper left-hand column, "Play Appeal," and in that paragraph it indicates, "The most important ingredient to success lies in the creation of products with play appeal," and that is referring to the pinball market.

I would like Would you agree with that statement?

A-T, Using the term "most important" is a very strong one.

I would say it ranks extremely high.

Is page 8 in the upper left-hand column, "Play Appeal,"

unfortunately. There is a reference to "play appeal" in the

expanding to 127 locations.

Do you know how many locations Bally has now

1 Q Now, there are also references in here to the fact that
2 the electronic machines had self-diagnostics of some self-
3 test devices and thereby were easier to repair.

4 Q Do you have any recollection of that impact
5 on the marketplace?

6 A Well, the self-diagnostics in the electronic flipper
7 machine were welcomed by operators whose job it was to then
8 repair equipment. It was perceived as a quicker, more
9 efficient way to troubleshoot fine problems and correct
10 problems via the self-diagnostics.

11 Q Is it fair to say that what self-diagnostics means is
12 that a computer gives you the ability to ask it what is
13 wrong when something is wrong with the game, and it can give
14 an indication of the state of disrepair of the game?

15 A Well, it was not quite as sophisticated as you being
16 able to ask it. You could walk it through a series of steps,
17 and if there was a problem within that given step, it would
18 indicate it via the displays.

19 Q I would like to refer you now, Mr. Nieman, to Exhibit
20 12-T, the 1978 Bally annual report.

21 I still cannot find the page. I believe it
22 is page 8 in the upper left-hand corner under the staple,
23 unfortunately. There is a reference to Aladdin's Castle
24 expanding to 127 locations.

25 Do you know how many locations Bally has now

1 of Aladdin's Castle arcades?

2 A. I do not know the exact number, but it is an approximate
3 450, 460 locations.

4 Q. 450 or 460?

5 A. Approximately.

6 Q. Now, the diagnostics that we referred to just a moment
7 ago, that is achieved in the microprocessor through programming
8 correct?

9 A. I am not sure how it is achieved.

10 Q. During this time -- strike that. Would refer to it as

11 We have talked about Bally's position in the
12 arcade market and the distribution market. The figures that
13 you have quoted the Court about the overall sales, do they
14 also include foreign sales?

15 A. In which figure of sales, sir?

16 Q. The pinball sales, the sales of pinball games, not the
17 Bow and Arrow, the unit sales, the overall unit sales.

18 A. This report, sir?

19 Q. Yes.

20 A. Foreign sales were included in this.

21 Q. Now, those foreign sales are also affected through
22 Bally distributors in foreign countries, are they not?

23 A. In certain foreign countries, yes, sir.

24 Q. Bally does indeed have an international network of
25 distributors, does it not?

1 A. Like every factory we have international distribution of
2 our product, yes.

3 Q. Over the years, isn't it the case that Bally introduced
4 a number of other player appeal features to its pinball games
5 over the years 1974 to the present?

6 A. Well, I would like to think that we constantly improved
7 our equipment. If you have a specific one, I would --

8 Q. How about super size tables?

9 A. We were not the first to introduce a pinball playfield
10 that was deviated from what -- if one would refer to it as
11 standard.

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1 Q You were not the first to do so?

2 A No, sir.

3 Q You did eventually come out with one?

4 A Yes, sir.

5 Q That was a play appeal feature, correct?

6 A At the time, we felt so.

7 Q Now, how about electronic sounds or voices or noises
8 in connection with the game? What did Bally do in that re-
9 gard?

10 A Well, we tried to take full advantage of the micro-
11 processor and what its capabilities were in the synthesis
12 of both music, sound, and speech.

13 Q Was Bally the first to come out with a talking game?

14 A It is not my understanding that it was first. I believe
15 another manufacturer had a game that actually had synthesized
16 speech.

17 Q But Bally also came out with that feature?

18 A Bally eventually had a game that had synthesized speech.

19 Q The games, the sales, that are reflected in the exhibit,
20 the exhibit you just referred to--

21 Q That number is what, Mr. Nieman?

22 A It is 88.

23 Q Exhibit 88, those are sales figures that reflect sales
24 of games with super-size tables and the synthesized sounds,
25 correct?

1 A That is correct, sir.

2 Q Now, I am going to show you a copy, Mr. Nieman, of some
3 pages of Exhibit 12-U, the 1979 Bally Annual Report, and I
4 would like you to refer, sir, in particular to the 10-K, the
5 last two pages of the Exhibit 12-U which I gave you.

6 There is a listing of parents and subsidiaries
7 domestically and in foreign countries, correct?

8 A Yes, sir.

9 Q Do a number of these companies listed here serve these
10 functions that you have addressed of distributing pinball as
11 well as perhaps other things both domestically and in foreign
12 countries?

13 A Some of them are involved in the distribution of coin-
14 operated amusement games.

15 Q Do the foreign subsidiaries all involve themselves in
16 assisting in the distribution of Bally games, Bally pin games,
17 pinball games?

18 A No, sir.

19 Q Which ones do not?

20 A Bally Australia, Limited does not distribute our product.

21 Q But the others do?

22 A No. I am going through it, sir.

23 Q Oh.

24 (Brief interruption.)

25

BY THE WITNESS: Now, Mr. Nieman, I do not have a list of

A Bally Manufacturing Company Ireland, Limited and Irish
Arcades are not involved in distribution. 12-U, your Honor.

Q But they are involved in pinball manufacture and usage,
correct? Yes, sir. It is the last page.

A No, sir. May I substitute this 12-U for that one?

Q They are not involved in manufacture?

A Manufacture in Ireland, no, sir.

A Now, Irish Arcades, I believe, operates games, and
I would have to believe that in their operation, if they do,
in fact, operate a full range of games, our pinball products
are probably among what they do operate. But it is an
operating company as opposed to distribution.

I shall show you what has been marked as Exhibit 12-B.
It is a copy of the United States Patent 2,418,051 to
a Mr. Vernon F. Hanna and assigned to Bally Manufacturing
Company.

Have you ever heard of a Bally patent owned
by Mr. Hanna?

A Yes, sir. I have heard reference to a patent referred
to as the Hanna patent.

Can't it be your understanding that the commercial games
operated by Bally which are referred to the commercial as it were
type of Bally, referred to as commercial, are covered by
this Hanna patent?

ri-
ion

1 THE COURT: Mr. Lynch, I do not have a list of
2 these companies.

3 MR. LYNCH: It is at the end of 12-U, your Honor.

4 THE COURT: 12-U is the --

5 MR. LYNCH: It is the last page.

6 May I substitute this 12-U for that one?

7 THE COURT: Okay.

8 BY THE WITNESS: I am asking if Bally Sales, Limited, Ireland is not involved in the

9 sale of Bally Sales, Limited, Ireland is not involved in the
10 sale of Bally coin-operated pinball equipment.

11 Gunter Wulff - Apparatebau is not involved
12 in the distribution of coin-operated pinball equipment.

13 BY MR. LYNCH: I understand, that they have their own

14 Q I show you what now has been marked as Exhibit 12-B,

15 Mr. Nieman, a copy of the United States Patent 4,198,051 to

16 a Mr. Marion F. Bracha and assigned to Bally Manufacturing

17 Company.

18 Have you ever heard of a Bally patent owned

19 by Mr. Bracha?

20 A Yes, sir. I have heard reference to a patent referred
21 to as the Bracha patent.

22 Q Isn't it your understanding that the commercial games
23 of Bally which you referred to the commercial solid state
24 games of Bally, referred to in Exhibit 88, are covered by
25 this Bracha patent?

1 MR. TONE: I object as beyond the scope of direct,
2 your Honor.

3 THE COURT: Sustained.

4 Well, I do not know that it is beyond the
5 scope of the direct, but I do not know that this witness'
6 understanding would be probative on the point. I think you
7 are asking for a technological answer.

8 MR. LYNCH: No. I am asking for what the under-
9 standing is at Bally, the understanding --

10 THE COURT: What the banter is at Bally?

11 MR. LYNCH: The general knowledge.

12 Mr. Anderson was already examined on that,
13 and that is the understanding, that they have their own
14 patent on their own system.

15 THE COURT: Mr. Tone.

16 MR. TONE: My objection is still, your Honor, that
17 it is beyond the scope of direct. We are going to prove
18 later the technological side of the commercial success point.

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1 THE COURT: Well, I think that certainly the tenor
2 of the direct was that all this commercial success is
3 attributable to plaintiff's patent --

4 MR. TONE: That was, your Honor, I think --

5 THE COURT: -- that is, the '411 patent. Otherwise
6 the testimony would have been immaterial.

7 MR. TONE: That's right. But we haven't connected
8 it up yet, because this witness isn't able to say whether
9 it's due to the patent.

10 THE COURT: Well, I think the scope of a direct
11 examination includes what is implied.

12 MR. TONE: All right.

13 THE COURT: And implied in this witness' testimony
14 is the proposition that the '411 patent is the generator of
15 this commercial success.

16 Now --

17 MR. TONE: I didn't go into that directly with the
18 witness, your Honor, because, as I conceived it, this witness
19 is only competent to testify about the sales and what kinds
20 of machines were sold, and not about whether a particular
21 kind -- or whether the patent covers the machine.

22 THE COURT: Well, now we're talking about a
23 different question, namely, competency. And competency, I
24 suppose, depends on the nature of the testimony.

25 Now, he's competent to testify to what the

1 scuttlebutt is around the office. The question is, is it
2 material what the scuttlebutt is around the office?

3 Let me hear you on that.

4 MR. TONE: Yes. All right. I think it is not
5 material, your Honor, what the scuttlebutt is around the
6 office.

7 Your Honor will hear testimony from expert
8 witnesses on whether the patent covers the electronic games
9 that were sold by Bally, and I think that's the controlling
10 thing.

11 The scuttlebutt is irrelevant. It doesn't
12 prove -- your Honor could not find infringement or non-
13 infringement on the basis of scuttlebutt.

14 THE COURT: I have problems with the scuttlebutt,
15 Mr. Lynch, because it's so difficult to pin down.

16 MR. LYNCH: Let me pursue it another way, your
17 Honor.

18 THE COURT: All right.

19 BY MR. LYNCH:

20 Q Has the Bracha patent ever been mentioned in any news
21 releases of Bally?

22 A I believe I can recall a press release that referenced
23 the issuance of the, what you're referring to as the Bracha
24 patent.

25 Q And that press release indicating the issuance of the

1 Bracha patent in fact indicated that the Bracha patent was a
2 patent that covered Bally's coin-operated pinball games.
3 Isn't that correct?

4 A I don't remember it that well.

5 THE COURT: This isn't exactly a matter of best
6 evidence, but I suppose if you had the press release it would
7 help.

8 MR. LYNCH: It was never produced, your Honor, I
9 understand it exists, but I can't get a copy.

10 If I could subpoena it.

11 MR. TONE: Your Honor, this is the first I've heard
12 of it. I don't know whether it exists or not. If we had it
13 and it was asked for, I assume we would have produced it.

14 MR. LYNCH: The discovery closed, I am told, your
15 Honor, before the Nutting patent came out -- the Bracha
16 patent came out. Not before the Nutting patent came out.

17 BY MR. LYNCH:

18 Q I show you an excerpt from the Wednesday, June 4, 1980
19 Wall Street Journal.

20 THE COURT: Now, you certainly can't impeach that
21 source.

22 BY MR. LYNCH:

23 Q That excerpt has been marked as Exhibit 12-F.

24 Does that refresh your recollection?

25 MR. LYNCH: That should be in your book, your Honor,

1 as well.

2 THE COURT: This exhibit?

3 MR. LYNCH: I think it is, but I don't know.

4 THE COURT: Probably is.

5 BY THE WITNESS:

6 A Sir, it doesn't distinguish by calling it a Bracha patent
7 or anybody else's patent, so it would -- I can't say for sure
8 that it references the Bracha patent and not some version of
9 another patent.

10 BY MR. LYNCH:

11 Q Do you know of any other patent at Bally that would have
12 been characterized as broadening the claims of the original
13 patent granted in June 1978?

14 A I know of no other one, no. But I don't know if this
15 one, either, would apply.

16 Q I show you a copy of what has been marked as Exhibit
17 12-D, U. S. Patent 4,408,762, Mr. Nieman.

18 That patent has to do with a lighting scheme,
19 an infinity back lighting scheme for the upper part of a
20 cabinet of a pinball game, does it not?

21 A Yes, for the back box illumination.

22 Q And you are aware of the fact that that infinity
23 lighting scheme was used in Bally commercial games, correct?

24 A Yes, sir, I am.

25 Q It was used in particular in the game Xenon, X-e-n-o-n?

1 A The one I thought of, sir, was a different one. For the
2 life of me I'm not sure Xenon did have it or not.

3 If you had a brochure, a picture, I'm sure I
4 could --

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Q But it has been included in a number of games?

A Yes, I thought of a different one, though.

Q The games in which it was included are games that are included in Exhibit 88, correct?

A Yes, sir, that is correct.

Q I show you a copy of U.S. Patent 4,354,680, marked as Exhibit 12-C.

That has to do with a crossover tube or an elevated ball pathway on the playfield, correct?

A Yes, sir.

Q Has that been used on Bally commercial games?

A Yes, sir.

Q That is a player appeal feature, correct?

A We certainly thought so when we put it in.

Q The games on which this feature of the patent, Exhibit 12-C, are included are games that are included on Exhibit 88, correct?

A Yes, sir.

Q I also show you a copy of U.S. Patent 4,257,605, a Bally patent having to do with a drop target play feature.

Has that been included on commercial Bally games?

A Yes, sir. I don't know what this is all about, but it

Q Those games are also included in the sales figures reflected in Exhibit 88, right?

1 A Yes, sir.

2 MR. LYNCH: May it please the Court, your Honor, I
3 will also mark the initial 1974 article, about which I
4 examined Mr. Nieman, quoting Mr. Nieman on the second page,
5 as Defendants' Trial Exhibit BB.

6 THE COURT: All right.

7 MR. LYNCH: 12-BB, I am sorry, your Honor.

8 No further questions, your Honor.

9 BY MR. GOLDENBERG:

10 Q Mr. Nieman, do you know Mr. Norman Clark?

11 A Norm Clark, yes, I do.

12 Q Who is he?

13 A Mr. Clark is an employee at Bally.

14 Q Was he an employee at Bally when you joined the company?

15 A No, I don't believe so.

16 Q When did he join the company?

17 A I don't know the exact year. I would venture mid-'70s,
18 but I am not sure.

19 Q What capacity does he have at Bally, if you know?

20 MR. TONE: Objection on the ground that is beyond
21 the scope of direct. Mr. Clark, as Mr. Goldenberg knows, is
22 our next witness.

23 Q As far as I don't know what this is all about, but it
24 is certainly beyond the scope of the direct.

25 THE COURT: I can't tell until I know what the

1 tenor of the questions is. the year he was hired at

2 MR. GOLDENBERG: Your Honor, if I may, the point
3 here is this commercial success argument; that in addition --

4 THE COURT: Why don't you go ahead and ask a ques-
5 tion, and then I can probably tell whether it is beyond the
6 scope.

7 BY MR. GOLDENBERG: At that time, that this design group headed

8 Q Mr. Clark was and is a pinball game designer from Bally,
9 is he not?

10 A Yes, sir. I think it is a fair statement to say that

11 Q He has designed a number of games that appear on this
12 list of Bally games about which you have testified, isn't
13 that true?

14 A Mr. Clark heads up the pinball design and has many de-
15 signers who work for him. What amount of influence he has
16 with any one particular design as opposed to the individual
17 designer whose project it is, I am not quite clear on.

18 It is a cumulative effect, and to call it
19 Norm Clark's design versus an individual designer's design
20 I think would be difficult for me to respond to that.

21 Q But he heads up the design group?

22 A Yes, he does.

23 Q As far as you know, he joined the company in the mid-
24 '70s or something past that?

25 A My best recollection is somewhere in the mid-70s, and

1 I apologize; I don't know the year he was hired at Bally.

2 Q All right, sir.

3 Do you know the previous employer of Mr. Clark
4 before he came to work for Bally?

5 A I believe he was employed by Williams prior to coming
6 to Bally, Williams Electronics.

7 Q Isn't it a fact, sir, that this game design group headed
8 up by Mr. Clark can be given some credit for the ability of
9 Bally to sell pinball games with player appeal?

10 A I certainly think it is a true statement to say that
11 the design of a playfield is a factor in the overall success
12 or failure of a game, yes, sir.

13 Q Do you know the company that had the first talking
14 pinball game?

15 A It is my understanding that Williams introduced an
16 electronic pinball machine that had synthesized speech in it.

17 (brief interruption.)

18 BY MR. GOLDBERG:

19 Q I now show you Plaintiff's Exhibits 111-A and 111-B.

20 Do I understand correctly, sir, that you pre-
21 pared those two exhibits based on information supplied to you
22 by the attorneys for Bally?

23 A No, sir, the Bally information input or it dug out as
24 far as production numbers. They supplied the production
25 numbers from the Williams and Gottlieb attorneys.

it

1 Q That was the first company of which you have knowledge?

2 A It is the first one I have knowledge of, yes, sir.

3 Q Sir, do you have Plaintiff's Exhibit 88 in front of you?

4 Q For you? That is that tabulation of --

5 A This one? the production numbers for 1957, and here I

6 Q re. Yes, you do have it. Plaintiff's Exhibits 88 and 89-A?

7 A I don't have it. Bear with me just a moment.

8 (Brief interruption.)

9 BY MR. GOLDENBERG: At this point they are --

10 Q I am sorry. Do you have Plaintiff's Exhibit 381-A?

11 A Could I see it? Give them up here.

12 Q It is the one labeled "Production Totals."

13 A I don't have it up here, sir. Why you didn't include

14 the production I have your copy, -- even though they are available.

15 MR. GOLDENBERG: Do you have a copy of that for the
16 witness, 381-A?

17 (Brief interruption.) discussion with counsel and as asked

18 BY MR. GOLDENBERG: production numbers, I think he said between

19 Q I now show you Plaintiff's Exhibits 381-A and 381-B.

20 Q Do you know? Do I understand correctly, sir, that you pre-

21 pared those two exhibits based on information supplied to you

22 by the attorneys for Bally? Is that correct?

23 A No, sir, the Bally information input of it I dug out as

24 far as production numbers. They supplied the production below

25 numbers from the Williams and Gottlieb attorneys.

Nieman - cross

1 Q So the Gottlieb and Williams information was supplied to
2 you by Bally's attorneys?

3 A Yes, sir.

4 Q Can you tell me, sir, was there any particular reason
5 for eliminating the production numbers for 1982, and here I
6 direct your attention to Plaintiff's Exhibits 89 and 89-A?

7 A I don't have those two, 89 and 89-A.

8 Q You don't have those?

9 A Maybe I do. At this point they are --

10 Q (Indicating).

11 A Okay, I don't have them up here.

12 Q All right, sir, you have copies of them now.

13 Can you tell me, sir, why you didn't include
14 the production figures for 1982, even though they are avail-
15 able in Exhibits 89 and 89-A; why were they not included on
16 this Exhibit 381?

17 A Because when we had a discussion with counsel and he asked
18 if I could produce production numbers, I think he said between
19 the years '74 and '81, and that is what I dug out.

20 Q Do you know what happened to the pinball production of
21 Bally in 1982, generally or specifically?

22 A In general terms what the numbers were?

23 Q Yes, sir.

24 A It would be my estimate that they would be somewhat below
25 the '81 figures.

Q Aren't they in fact included on this Exhibit 88?

A 88 shows sales figures, yes, sir.

Q Now, again that is sales for '82 as opposed to production of '82.

Q All right, sir, but can you --

A They would be within a range of each other, let's say.

Q So there wouldn't be a great difference between production and sales for '82 for Bally?

A Well, there would be a certain percentage. Whatever the inventory was on December 31, 1982, that would carry over into the next year.

Q If you look at Exhibit 88, on page 2, where the '82 figures are given, if I told you we added those production figures up and -- I am sorry. Those are sales figures -- those sales figures up, and it came up to approximately 25,000, would that seem correct to you? If you want to do the addition yourself from Exhibit 88 --

A Well, no, I am not going to do a longhand addition, sir. I was just trying to glance over and look at some of the numbers.

Q We have a little pocket calculator if that would help you.

A If you tell me that you did the math --

Q Our precise number was 24,934.

A Approximately 25,000 units.

1 Q Can you agree with me, sir, that there was a significant
2 drop in production for all manufacturers from 1981 to 1982?

3 A I would say the term significant would apply.

4 Q Do you have any explanation for that?

5 A The demand for the product from the marketplace declined
6 from the demand that was there in 1981.

7 Q Do you know why demand dropped?

8 A I could offer some theories.

9 Q What would your theories be?

10 A I would say a continued success in the marketplace of
11 video games through the first half of '82.

12 Q By video sales, you mean electronic video games?

13 A Electronic coin-operated video games.

14 The demand remained constant somewhat through
15 the first six months of 1982, and consumed a tremendous amount
16 of the budgets allocated towards new game sales -- new game
17 purchases on the part of operators.

18 Q Let me be sure I understand this.

19 The demand for electronic video games was --
20 remained firm for the first six months of 1982?

21 A Remained very strong.

22 Q Very strong, and therefore people weren't buying pinball
23 games.

24 A The number of those buying were greatly reduced. The
25 demand for the product was significantly reduced in 1982 as

1 compared to 1981.

2 Q Even though at this point in time they were all electron-
3 ically controlled in the industry, as far as you know. Isn't
4 that true?

5 A By 1982 it's my understanding all manufacturers were
6 producing electronic formatted pinball machines.

7 Q All right, sir. I'm not sure this is that clear, and I
8 apologize if I've gone over --

9 Q Someone else has gone over it, but don't you agree that
10 the design of the game, the player appeal, has a great deal
11 to do with the number of games that are sold?

12 A Of an individual model, yes.

13 Q And that's true whether you're talking electromechanical
14 games or whether you're talking electronic games.

15 A Well, the play appeal in the electronics are certainly --
16 what the potential of play appeal, what you can do with
17 electronics is different from what you can do with the
18 electromechanical.
19 So electronically speaking the play appeal
20 features, I think, had more of an impact.

21 Q Well, sir, could you answer my question? Isn't it true,
22 equally true for electromechanical games and electronic
23 games?

24 A That?

25 Q I'm sorry?

1 A. Could you finish the question? I'm not sure --

2 Q. Oh, I'm sorry.

3 Q. My question is: Isn't it equally true for
4 pinball games, whether they're electromechanical or electronic,
5 that player appeal, play game features, is a great determining
6 factor in whether the game is successful in the marketplace?

7 A. It is certainly a determining factor; and the adjective
8 "great" I would be comfortable with using.

9 Q. Thank you.

10 Does Bally mark patent numbers on its
11 products, and specifically pinball games?

12 A. I'm not aware. It's not an area I get involved in, so
13 I would not know if the patent numbers exist on the equipment.

14 MR. GOLDENBERG: I have no further questions.

15 MR. TONE: A few questions, Mr. Nieman, on redirect.

16 .REDIRECT EXAMINATION

17 BY MR. TONE:

18 Q. Mr. Lynch inquired about the effect of the New York and
19 Chicago ordinances. Do you recall that?

20 A. Yes, sir.

21 Q. Did those ordinances have any effect on whether arcade
22 owners in New York or Chicago or elsewhere chose to buy
23 electronic video games as opposed to electromechanical games,
24 in your opinion?

25 A. Well, no. The ordinance only allowed them to operate

pinball equipment. It didn't specify electronic versus electromechanical.

Q And I take it then the ordinance, in your opinion, didn't have any effect on the decision of arcade operators as to which kind of game to buy.

A No. The ordinance wouldn't affect which type of machine they would buy.

Q And the ordinance is about the sale of pinball machines?

A Yes, right.

Q And the ordinance is about the sale of pinball machines?

A Yes, the ordinance is about the sale of pinball machines.

Q And the ordinance is about the sale of pinball machines?

A The vast area is contained within the city's

last's structure, what is the last's structure, by the

place. I believe that the ordinance is the last's

operations, but I am not positive.

Q So I think it would be safe to say that both

are involved in the arcade business.

Q Do you know whether the place or both is a subsidiary or not, as in the case of the company?

A I understand both of them to be subsidiaries.

Q Are they separate profit centers?

A Yes, yes.

Q Would it be correct to say that the company is a subsidiary of the

company is involved in producing and selling pinball

1 Q Counsel tells me I misspoke and spoke of video games
2 rather than pinball games. If I did, I meant pinball games.

3 Did you understand me to mean that?

4 A If you did, I understood it as pinball machines.

5 Q All right. I heard about video games during the cross,
6 and that word may have crept in, but I meant pinball games.

7 A I understood it as the impact of the ordinance on the
8 sale of pinball equipment.

9 Q All right.

10 Is Bally's arcade business all in a subsidiary
11 called Aladdin's Castle, or is there more than one arcade
12 business operated by Bally?

13 A The vast amount is contained within the Aladdin's
14 Castle structure, whether or not arcades operated by Six
15 Flags. I believe that revenue remains in the Six Flags
16 operations, but I am not positive.

17 So I think it would be safe to say that both
18 are involved then in the arcade business.

19 Q Do you know whether Six Flags or Bally is a subsidiary
20 as distinguished from a division of the company?

21 A I understand both of them to be subsidiaries.

22 Q Are they separate profit centers?

23 A Yes, sir.

24 Q Which means that the manager of each of those sub-
25 sidiaries is interested in producing a maximum profit for

1 his profit center, is that correct?

2 MR. GOLDENBERG: Leading, Judge.

3 MR. TONE: It is leading, but it is redirect, your
4 Honor.

5 THE COURT: I will overrule the objection.

6 THE WITNESS: Can I answer?

7 THE COURT: Yes.

8 BY THE WITNESS: examiner, is that correct?

9 Q It would be my understanding that a manager of each one
10 of those subsidiaries -- his first priority is to make a
11 profit for his subsidiary. your knowledge?

12 BY MR. TONE: r. It does.

13 Q Do Bally's arcades, and by that I refer to the two you
14 have just spoken of, use pinball games manufactured by
15 Gottlieb? sir. It does.

16 A Yes, sir.

17 Q Do they use pinball games manufactured by Williams?

18 A Yes, sir.

19 Q Do you have any notion of whether the Bally manufac-
20 tured games are in the majority or the minority in arcades
21 operated by those companies, subsidiaries?

22 A I would not be aware of the exact numbers of the break-
23 outs. My opinion from reviewing income reports from various
24 arcades that they operate, it would appear to me that the
25 Bally equipment is, in fact, in the majority.

9-221

1 Q They have substantial quantities of Gottlieb and
2 Williams games in those arcades?

3 A Again, the term, substantial, I do not know what is
4 substantial. They have the good games from each of those total
5 manufacturers. Whether it is substantial or not, I am not
6 sure. That is, Aladdin's Castle or Six Flags, approximately?

7 Q Bally also operates a distribution business, as we would
8 heard on cross-examination, is that correct? Or else they

9 A Yes, sir. Any way of making that judgment would be in

10 Q Does that distribution business also function as a other
11 separate profit center, to your knowledge?

12 A Yes, sir. It does. How you give us a percentage estimate?

13 Q Does that distribution business of Bally distribute the
14 games manufactured by other manufacturers? Or else of what?

15 A Yes, sir. It does. Now 5 percent, and it is probably
16 more or less 3 percent or under.

17 Q What you are saying -- would you restate it; that is,
18 state what percent of your sales of pinball games you estimate
19 you sell to Bally arcades, either Six Flags or Aladdin's
20 Castle.

21 A Well, to arrive at a figure, you would go back and say
22 look at the best situation where the numbers are maximized,
23 say, 1979. I know what we sold in a particular run and would
24 know how many of that run we sold to Aladdin's Castle. That
25 percent of the entire run would be less than 5, probably

does 1 Q Do those other manufacturers include Gottlieb and
2 Williams?

3 A Yes, sir. It does.

4 Q Can you tell me, Mr. Nieman, what percentage of the total
5 arcade business in the United States is represented by Bally
6 arcades; that is, Aladdin's Castle or Six Flags, approximately?

7 A I would not have the numbers available to me that would
8 indicate what percent of the entire arcade universe they
9 occupy. My only way of making that judgment would be in
10 relating what percent of a particular model I would sell them
11 as opposed to the entire balance.

12 Q Based upon that, can you give us a percentage estimate?

13 A Well, based on that, it would be a small percentage.

14 Q Can you give us something on the magnitude of what?

15 A It certainly was below 5 percent, and it is probably
16 more or less 3 percent or under.

17 Q What you are saying -- would you restate it; that is,
18 state what percent of your sales of pinball games you estimate
19 you sell to Bally arcades, either Six Flags or Aladdin's
20 Castle.

21 A Well, to arrive at a figure, you would go back and say
22 look at the best situation where the numbers are maximized,
23 say, 1979. I know what we sold of a particular run and would
24 know how many of that run we sold to Aladdin's Castle. That
25 percent of the entire run would be less than 5, probably

Nieman - redirect

around a 3 percent figure.

Q You spoke of the vertical integration of Bally's manufacturing operations, and Mr. Lynch, I think, asked you a question about that based upon one of the annual reports or a statement in the annual report.

Was there any change in Bally's operations with respect particularly to vertical integration of manufacturing after the advent of electronic pinball games to your knowledge?

A Well, as I said in 1978, they divisionalized the entire pinball operation out of the corporate structure and placed it as a separate entity division, if you will.

That is to my knowledge the only change I can recall post-electronic within the structure of Bally.

Q What does vertical integration of manufacturing operations mean to you?

A Well, I think it gets involved -- my interpretation of that would be the involvement of different suppliers that feed your manufacturing facility and how deeply on a vertical basis you go in securing different components there that are involved in the manufacture of the game.

1 Q Did that change so far as you know after electronic
2 games took over the market?

3 A Not that I know of, no, sir.

4 Q The microcomputer, of course, was not manufactured by
5 Bally, was it, or do you know?

6 A The microcomputer, sir?

7 Q Yes, the microcomputer system in the game.

8 A You mean the boards that are in the game?

9 Q Right.

10 A They were made by a different subsidiary.

11 Q With reference to a term you used, flipper machines,
12 Mr. Nieman, is that shorthand or slang meaning what?

13 A Technically the term, pinball, can refer to different
14 types of equipment.

15 This type There is a thing called an in-line pinball
16 machine that is used in certain markets in the United States
17 and certain markets in the foreign market that is not like
18 the equipment that is here. It is more of a gaming nature.
19 I reference it as a flipper pinball to mean
20 more like the machines here that has a flipper at the bottom
21 of it that would allow one the skill of projecting the ball
22 back up the playfield.

23 Q The term, flipper, refers to the flippers we see on
24 the machines?

25 A The flipper assembly at the bottom, right, sir.

Q Are the figures you assembled for us figures for flipper pinball machines?

A Yes, sir. They are.

Q Flipper pinball machines are what we are talking about in this case in your testimony, is that right?

A That is my understanding, yes, sir. That is what we are talking about.

Q Are those sometimes referred to as flipper machines?

A Yes, sir.

Q Or pinball machines?

A Or pinballs, yes, sir.

Well, just to distinguish, I think the common person on the street refers to this type of equipment as a pinball and means this type of equipment.

Q This type of equipment being?

A The type that are here in the court.

Q The flipper?

A The amusement device. Without flippers, there are certain deviations of what they call in-line flippers that are not pure amusement machines, and those you would call in-line, and this I would call a flipper.

MR. TONE: May I see these exhibits?

(Brief interruption.)

1 BY MR. TONE:

2 Q Referring to Exhibits 381-A and -B, Mr. Nieman, 381
3 being headed "Production Totals," just so we are clear about
4 it, are those production totals for games produced in the
5 United States?

6 A The Bally numbers are for machines produced in the
7 United States. That is all we produce them.

8 Q The Williams and Gottlieb numbers you simply accepted
9 from Counsel and compared those with Bally production in
10 the United States, right?

11 A Yes, sir.

12 MR. TONE: May I confer a moment, your Honor.

13 (Brief interruption.)

14 MR. TONE: Your Honor, we re-offer Plaintiff's
15 Exhibits 378, 379, and 380.

16 THE COURT: Those were the ones that we were going
17 to reserve ruling on -- did reserve ruling on?

18 MR. TONE: Yes.

19 MR. GOLDENBERG: Yes, your Honor. I maintain my
20 objection to them, particularly on the basis of the answers
21 elicited on Mr. Lynch's examination about how that data was
22 accumulated. It has no really underlying evidence or
23 reliability or accuracy.

24 MR. LYNCH: It is classic survey evidence, your
25 Honor, and it hasn't been accumulated with any of the care

1 that survey evidence normally has to be accumulated with.

2 THE COURT: Which ones were those?

3 Those were based on business records.

4 MR. LYNCH: The Bow and Arrow things.

5 MR. TONE: Those are the Bow and Arrow comparison
6 charts showing that they placed Bow and Arrow electronic
7 and electromechanical games --

8 THE COURT: I don't regard that as survey evidence.
9 Those are documents based on sales figures.

10 MR. LYNCH: No, it supposedly indicated the play
11 at those arcades. It seems to me that --

12 THE COURT: But has to be based on some sort of
13 records. Itself determined by the --

14 MR. LYNCH: It depends on whether you put it up
15 front, where you put it one on another, what the operator
16 said about, "This is a computerized unit."

17 Those people are interested in one thing,
18 your Honor, making a buck, and if they have a gimmick there
19 to make a buck and they could say, "This is a computerized
20 machine," there is just no control situation to compare them.
21 That is all.

22 MR. GOLDENBERG: Your Honor, I would remind you
23 that we originally objected to those on the basis that they
24 were not produced to us during --

25 MR. LYNCH: They were also not produced, and we

1 could not cross-examine.

2 THE COURT: Well, I think that objection depends
3 on whether there is any prejudice. I see no prejudice, and
4 as far as the reliability factor is concerned, it seems to
5 me there is sufficient reliability just in the fact that
6 these operators are both motivated by the desire to make a
7 profit and they are not going to put a machine that doesn't
8 look like it is going to be attractive to customers in a
9 prominent place. If they do, they won't leave it there
10 very long if it doesn't sell.

11 So it seems to me that the question of the
12 location of the table in the premises is something that is
13 probably itself determined by the popularity of the machine
14 rather than vice-versa; but in any case, those are matters
15 that go to the weight of the evidence, not its admissibility.

16 I will receive those documents.

17 (Plaintiff's Exhibits 378, 379, and 380 received in
18 evidence.)

19 MR. TONE: Very well, that concludes the redirect,
20 your Honor.

21 THE COURT: Any recross?

22 MR. LYNCH: No questions, your Honor.

23 MR. GOLDENBERG: No questions.

24 THE COURT: All right, thank you, sir.

25 (Witness excused.)

1 THE COURT: We will take a short -- do you have
2 anything more?

3 MR. TONE: No, your Honor, I was just going to
4 call the next witness.

5 THE COURT: All right, let's take 10 minutes be-
6 fore the next witness.

1 (Brief recess.)

2 MR. TONE: Mr. Clark.

3 A Sorry, I thought he was here. He slipped
4 away, I guess.

5 THE COURT: When I say 10 minutes, I mean 10
6 minutes. And what inevitably happens, as you know, is that
7 work in there has accumulated, and I become a kidnap victim
8 to some extent. So please bear with me.

9 MR. TONE: We all understand I'm sure.

10 Mr. Clark, will you take the stand.

11 Plaintiff's Witness Norman Clark, sworn.

12 DIRECT EXAMINATION

13 BY MR. TONE:

14 Q Will you state your name.

15 A Norman Clark.

16 Q C-l-a-r-k?

17 A That's correct.

18 Q Where do you live, Mr. Clark?

19 A 8149 Merrimac, Burbank, Illinois.

20 Q And where is your place of business?

21 A Bally-Midway, 10601 West Belmont.

22 Q Are you employed by Bally-Midway?

23 A Yes, I am.

24 Q In what capacity?

25 A I'm manager of the pinball design department.

1 Q Tell us your post-high school education, summarize it
2 for us very quickly.

3 A I took an electrical course at Montreal Tech, and took
4 radio, junior radio engineering at a school called SEC.

5 Q Is that also in Montreal?

6 A Yes, it was.

7 Q And over what period of time did you take those courses?

8 A They were night courses. Over about three years.

9 Q Will you tell us your employment history prior to the
10 time when you became employed by Williams in Chicago.

11 A I came to Chicago and was employed by Hallicrafter
12 Radio in the engineering department for a period of seven
13 months.

14 I then left Hallicrafter's and was employed
15 by Williams Electronics in the early part of '55, and re-
16 mained there until the end of 1974.

17 Q And then what happened at the end of 1974?

18 A I joined the Bally organization on January 2nd, 1975.

19 Q During the period you were at Williams, which was the
20 period 1955 to 1975, what were your duties and responsi-
21 bilities? Trace it for us chronologically.

22 A When I started at Williams in '55 I went into the
23 engineering department in the capacity of a technician.

24 I then became a circuit man for several years.

25 Q What is a circuit man?

1 A I was doing all the electrical circuitry for pinball
2 machines.

3 Q Then you I then advanced into the design, and my
4 duties then were as a designer, project engineer and designer,
5 and as such I did my own circuits.

6 Q And this was a project engineer and designer of pinball
7 games? A That is correct.

8 A That's correct.?

9 Q And for how many years then at Williams were you em-
10 ployed in some facet of the engineering and design of pin-
11 ball games?

12 A From 1955 until '75, about -- going on 20 years.

13 Q I came to Bally and took over the design department of
14 Bally, and my duties were designing or in charge of the
15 design of pinball machines.

16 Q You were in charge of the design and engineering pinball
17 department in Bally?

18 A That is correct.

19 Q Did your duties change after that?

20 A No, they have not.

21 Q You have been in that ever since?

22 A Yes, sir.

23 Q Have your duties changed?

24 A Yes, sir. The title -- I became a vice president of the
25 design department at Bally in the fall of last year, and

1 Q You became a project engineer in what year?

2 A Around 1960.

3 Q Then you came to Williams or you came from Williams to
4 Bally the first of 1975?

5 A That is correct.

6 Q Is that right?

7 A That is correct.

8 Q In January 1975?

9 A Right.

10 Q You have been there ever since?

11 A Yes.

12 Q What have your duties been at Bally?

13 A I came to Bally and took over the design department of
14 Bally, and my duties were designing or in charge of the
15 design of pinball machines.

16 Q You were in charge of the design and engineering pinball
17 department in Bally?

18 A That is correct.

19 Q Did your duties change after that?

20 A No, they have not.

21 Q You have been in that ever since?

22 A Yes, sir.

23 Q Have your titles changed?

24 A Yes, sir. The title -- I became a vice president of the
25 design department up until -- about April of last year, and

1 we closed down our pinball operation at Bensenville, and when
2 I moved to Bally Midway about April or May, the title became
3 manager of the department.

4 Q At all times during your employment at Bally, have you
5 had responsibilities in the engineering and design of pinball
6 games?

7 A Yes, I have.

8 Q So you have spent nearly 30 years in the pinball game --
9 in the field of design and engineering of pinball games and
10 25 in actual design, is that right?

11 A That is true.

12 Q When you worked for Williams, did you have knowledge of
13 the products of competitors of Williams?

14 A Yes, sir.

15 Q Did you examine those products and know how they worked?

16 A Yes, sir.

17 Q Regularly?

18 A Yes, sir.

19 Q Has the same been true at Bally?

20 A Yes, sir.

21 Q Can you estimate for us, Mr. Clark, the number of games
22 you designed and engineered, and by this I mean pinball
23 games, during the last five years you worked at Williams?

24 A I would estimate in the neighborhood of 50 games.

25 Q That is over that five-year period?

1 A. Yes, sir.

2 Q. Did you also design a substantial number of games prior
3 to that time?

4 A. Yes, sir.

5 Q. Are you able to estimate that five-year period for a
6 particular reason?

7 A. Yes. I had records of the games in that period of time.

8 Q. Is it fair to say that during the 1960's and '70's you
9 had familiarity with the pinball machines manufactured by
10 the three major manufacturers, Gottlieb, Williams, and Bally?

11 A. Yes, sir.

12 Q. When you refer to a pinball game or pinball machine, I
13 have heard you in our conversation call it a flipper game.

14 A. Yes, sir.

15 Q. Is that another name you use for pinball machines?

16 A. That is a common name in the industry for pinball.

17 Q. What kind of logic system did commercial coin-operated
18 pinball games have prior to the year 1975?

19 A. Electromechanical.

20 Q. How long had that technology been used in the pinball
21 industry?

22 A. Ever since the start of the industry, I suppose. It was
23 there when I started in '55.

24 Q. Can you briefly describe how an electromechanical pinball
25 game functions?

Clark - direct

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1 A. It functions by relays, step units, score motors.

2 Q Can you identify the lighted-up game, which is Plaintiff's
3 Exhibit 333?

4 Q And you I am going to ask you to step down and take
5 a look at both of these games. One is 333, and one is 332.

6 A (Brief interruption .)

7 Q Tell us what the other is.

8 A The other is electronic operated game.

9 This (indicating) is electromechanical.

10 Q Now referring to those Flicker games, will you take a
11 look at a document -- you can remove the stand, and take a
12 look at a document marked Plaintiff's Exhibit 337.

13 I am sorry. 337.

14 A Yes, sir.

15 Q Can you tell us what that is?

16 A That is a general publication of basic knowledge from
17 pin games, on electromechanical pin games.

18 Q Did that apply to more than one kind of electromechanical
19 pinball game?

20 A Yes, it is a general manual.

21 Q That would be applicable to any electromechanical game
22 fully manufactured and sold at the time the manual was produced
23 and was used.

24 A Yes, that is true.

25 Q Now would you look at Plaintiff's Exhibit 33 and tell us

1 BY THE WITNESS:

2 A The question is can I identify it?

3 BY MR. TONE: Now you go to Exhibit 337 in the exhibit

4 Q Can you identify one of them as an electromechanical
5 and the other as a -- it.

6 A Yes, sir.

7 Q Tell us what the other is.

8 A The other is electronic operated game.

9 This (indicating) is electromechanical.

10 Q Now referring to those Flicker games, will you take a
11 look at a document -- you can resume the stand, and take a
12 look at a document marked Plaintiff's Exhibit 337.

13 Q Will you -- I am sorry. 337. Plaintiff's Exhibit 337

14 A Yes, sir. Will you tell us what Plaintiff 337 is?

15 Q Can you tell us what that is?

16 A That is a general publication of basic knowledge from
17 pin games, on electromechanical pin games.

18 Q Did that apply to more than one kind of electromechanical
19 pinball game?

20 A Yes, it is a general manual.

21 Q That would be applicable to any electromechanical game
22 Bally manufactured and sold at the time the manual was produ-
23 ced and used?

24 A Yes, that is true.

25 Q Now would you look at Plaintiff's Exhibit 58 and tell us

1 what that is?

2 A. That is a game manual for the game Flicker.

3 Q. Is that the game you just looked at here in the court-
4 room?

5 A. Yes, that is right.

6 Q. Tell us what the purpose of that game manual was when
7 Flicker was being manufactured and sold?

8 A. It is an instruction manual to the operator, informing
9 him how to set up the game and the general features of the
10 game.

11 Q. Applicable specifically to Flicker?

12 A. That is correct.

13 Q. Will you now look at Plaintiff's Exhibit 55?

14 A. Will you tell us what Exhibit 55 is?

15 A. That is the schematic diagram of that particular game,
16 Flicker.

17 Q. At my request, Mr. Clark, did you compare that schematic
18 diagram, Plaintiff's Exhibit 55, with the original schematic
19 diagram in the files of Bally Manufacturing Company?

20 A. Yes, I did.

21 Q. Do you have that original with you today?

22 A. Yes, I brought it along.

23 Q. That is the one copy of those schematics that is retained
24 by Bally in its records?

25 A. That is true.

3 Clark - direct

1 Q Does it maintain such records on all games it has manu-
2 factured?

3 A Yes, sir.

4 MR. LYNCH: There is no problem with the drawing.

5 MR. TONE: Very well. Mr. Lynch states there is
6 no problem with the drawing.

7 I take it Mr. Goldenberg agrees?

8 MR. GOLDENBERG: Oh, I have no problem with it.

9 BY MR. TONE:

10 Q All right, then would you look at Exhibit 57 and tell us
11 what that is?

12 A That is a brochure of the game Flicker that goes out for
13 advertising purposes.

14 Q All these exhibits, 377, 58, 55, and 57, apply to the
15 electromechanical Flicker, is that correct?

16 A That is correct.

17 Q All right, Mr. Clark, after 1975 -- you may put down
18 the exhibits -- was there a change in the logic system used in
19 pinball games?

20 A Yes, there was.

21 Q What was the change?

22 A The change was from electromechanical logic to electronic
23 logic.

24 Q Did Bally make that change?

25 A Yes.

1 Q Did the other manufacturers in the industry make the
2 same change?

3 A Not at that time.

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1 Q Did they subsequently make the change?

2 A Yes.

3 Q Did you as chief engineer for pinball machines at Bally --
4 and that was your function, was it not?

5 A Yes.

6 Q (Continuing.) -- have any substantial expertise in
7 logic systems other than electromechanical in 1975?

8 A No, sir.

9 Q Was the same true of the other pinball game engineers
10 and pinball game designers at Bally?

11 A Yes, the same was true.

12 Q Was the same true of the other pinball engineers and
13 designers at Williams?

14 A Yes.

15 Q When did Bally or Midway first produce a commercial
16 microprocessor pinball game?

17 A 1976, I believe.

18 Q Were you aware of any commercial electronic games before
19 that time?

20 A There was one that I was aware of.

21 Q What was the name of that game?

22 A That particular game was a game called Dynamite.

23 Q Who manufactured it?

24 A Allied Leisure.

25 Q Did you see the game in 1975?

1 A I believe it was 1975 I saw it.

2 Q I ask you to look at a memorandum marked Plaintiff's
3 Exhibit 435.

4 Do you recognize that memorandum?

5 A Yes, sir.

6 Q Did you prepare the original of that memorandum on or
7 about the date it bears?

8 A Yes, sir.

9 Q Do you now as you sit there have an independent recol-
10 lection of the details of the facts recited in that memorandum?

11 A Vague recollection.

12 Q Did you have an accurate detailed recollection of those
13 facts at the time you wrote the memorandum?

14 A I imagine I did, sir.

15 Q Did you record them accurately in the memorandum?

16 A I would have, yes, sir.

17 Q The memorandum contains your report on a trip you took
18 to inspect one of these Dynamite machines, is that right?

19 A That is correct.

20 Q Will you describe for us, Mr. Clark, the procedure for
21 designing and engineering pinball games while you worked at
22 Williams?

23 A Yes, I will try to.

24 Q All right.

25 A We would start off by trying to get a concept of

1 themes for games and lay them out on paper, full-scale
2 drawings. We would make boards from the drawings, do the
3 electrical circuits for the game, build up the relays, wire
4 the games, get them into a playable condition, make con-
5 siderable changes until we got the game to a point where we
6 thought it was correct or it would be an acceptable game
7 for the public, and then we would tighten up the drawings.

8 Q What part of that work was done under the direction of an
9 the project engineer? electronic pin ball games?

10 A All of it.

11 Q All of it? I suspect did the procedure change?

12 A All of it. did not have to do any mechanical drawings or

13 Q When you arrived at Bally, what was the procedure for
14 developing pinball games of the electromechanical kind? ie we

15 A It was the same procedure. We would then go to a pro-
16 grammer and write the story of the game and give it to the
17 programmer, and it was his duty to complete what we would nor-
18 mally have done electromechanically.

19 Q Was the programmer an electronic engineer?

20 A Yes, he was.

21 Q And is he today?

22 A Yes, he is.

23 Q Is that the way electronic pinball games are designed
24 and engineered today?

25 A Yes, sir.

1 Q And of course you didn't have any experience with
2 electronic pinball games at Williams because they weren't
3 making them yet. Is that correct?

4 A That's true.

5 Q And essentially the same procedure was used at Bally,
6 did you tell us?

7 A That's correct.

8 Q Was there any change in that procedure after Bally began
9 making and selling electronic pinball games?

10 A Yes, sir.

11 Q And in what respect did the procedure change?

12 A Well, we did not have to do any mechanical diagrams or
13 the assembly relays, relay banks or any of this.

14 We designed the game up to the point where we
15 were going to go into circuitry. We would then go to a pro-
16 grammer and write the story of the game and give it to the
17 programmer, and it was his duty to complete what we would nor-
18 mally have done electromechanically.

19 Q Was the programmer an electronic engineer?

20 A Yes, he was.

21 Q And is he today?

22 A Yes, he is.

23 Q Is that the way electronic pinball games are designed
24 and engineered today?

25 A Yes, sir.

Q Referring back to the Dynamite game, Mr. Clark, do you know what kind of logic system that game used?

A Well, I understood it was TTL logic.

Q You didn't take it apart and look at it, but that was your understanding of the game?

A That's correct.

Q Referring now to the period 1974, 1975, at that time do you have an opinion as to whether, based on your experience, as to whether persons of ordinary skill in the art of designing and engineering electromechanical pinball games had knowledge of the microcomputer art?

A No, sir.

Q I suppose it's not quite apt to characterize that as an opinion.

Q You worked with such people and observed them and had occasion to find out what the extent of their knowledge was pertinent to pinball games. Is that right?

A Yes, sir.

Q And is it your testimony that such persons, in your experience, did not have knowledge of the microcomputer art?

A That's right, they had not the knowledge.

Q Did such persons have knowledge --

THE COURT: Excuse me, Mr. Tone.

Q These are persons who are skilled in what, did you say?

1 MR. TONE: In the pinball -- in the engineering
2 and design of electromechanical pinball games. And the period
3 is 1974, 1975.

4 BY MR. TONE:

5 Q And if I were to ask the same question concerning the
6 art -- well, let me put the whole question in its entirety.

7 Referring to that same time period, did persons
8 of ordinary skill in the art of designing and engineering
9 electromechanical pinball games have knowledge of the art of
10 applying microcomputer logic to pinball games?

11 A No, sir.

12 Q Or of applying microcomputer logic to any games, insofar
13 as you know?

14 A No, sir.

15 MR. TONE: May I confer for a moment?

16 THE COURT: Yes.

17 (Brief interruption.)

18 BY MR. TONE:

19 Q Do you understand the term, what I refer to when I
20 refer to electrical noise?

21 A Yes, sir.

22 Q Will you explain what you understand electrical noise to
23 be, as I'm using that term?

24 A Electrical interference that would interfere with the
25 electronic package. It could be static electricity, electro-

1 magnetic electricity. I believe that's what you're asking.

2 Q Was electrical noise a problem in the designing and
3 engineering of electromechanical pinball games?

4 A No.

5 MR. TONE: No further questions on direct, your
6 Honor.

7 I do have some exhibits to offer, those that
8 I identified as Plaintiff's Exhibits 377, 58, 55, 57, and
9 435.

10 THE COURT: All right, they're received.

11 MR. GOLDENBERG: We have no objection.

12 MR. LYNCH: No.

13 THE COURT: All right.

14 (Plaintiff's Exhibits 377, 58, 55, 57 and 435 were
15 received into evidence.)

16 CROSS EXAMINATION

17 BY MR. GOLDENBERG:

18 Q Mr. Clark, I believe you said in the period of 1960 you
19 became a project engineer at Williams. Is that correct?

20 A Yes.

21 Q And from that time forward you had a responsibility for
22 pinball game design?

23 A That's correct.

24 Q Now, for what part of the design did you have responsi-
25 bility, the playfield design or the electromechanical

1 circuitry underneath, or both?

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2 A Both.

3 Q Did you report to anyone, sir, at Williams?

4 A Yes.

5 Q To whom did you report?

6 A In the early days I reported to Gordon Horlick, who was
7 the chief engineer; and then we moved over to the California
8 plant, and at that time I reported to Frank Murphy.

9 Q All right, sir. Do you know a Mr. Steve Kordek?

10 A I sure do.

11 Q Do you know what his duties and responsibilities were
12 then?

13 A He was the project engineer and designer.

14 Q Was his responsibility as yours, that is, a responsibility
15 for both playfield design and electrical design?

16 A Basically Steve did not get into the circuits as much
17 as I did. There was a circuit man that did most of the
18 circuits for Steve.

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19 Q Now, the values of the components, the values of the
20 electronic values for the circuit, is that correct?

21 A Generally, yes.

22 Q Now, all that was done to the circuit, is that correct?

23 A Yes, that's correct.

24 Q Now, the circuit, is that correct?

25 Q Now, the circuit, is that correct?

1 Q Now, sir, when you undertood to design a pinball game,
2 what was the first thing you designed? Was it the electrical
3 circuitry, or was it the playfield?

4 A The playfield.

5 Q By the design of the playfield, do we mean where the
6 switches are going to be placed, where the lights are going
7 to be placed in the various alleys and runs on the playfield?

8 A That is part of it.

9 Q What else?

10 A The theme of the game, the actual theme of the game
11 basically is what we are looking at.

12 Q Whether the name is going to be called --

13 A Not the name of the game, sir.

14 Q Nöt the name of the game?

15 A No.

16 Q Well, what do you mean by the theme then?

17 A Play features on the game.

18 Q Would it also include determining the rules in the
19 game, the rules of the game in the sense of determining the
20 scoring values for the different switches and bumpers?

21 A Correct, yes.

22 Q So all that was done before you ndertook any electro-
23 mechanical design, is that correct?

24 A That is correct.

25 Q It might be changed somewhat later on, but basically

1 the playfield design was complete?

2 A Right.

3 Q Now, when you undertook the electrical design, what did
4 you do for a game where you had now completed the playfield
5 design?

6 A Well, I did the schematic, the basic schematic, on the
7 game, so that we could wire and make the game function.

8 Q In the course of doing that, sir, would you make any
9 fundamental changes in the electrical design of the previous
10 game?

11 A In some cases, yes.

12 Q Well, isn't it the fact that over a period of time in
13 electromechanical games, a certain pattern of electrical
14 design had developed as to whether particular relays and
15 switches and stepping switches were going to be? Isn't
16 that true?

17 A To some extent, yes.

18 Q And that when you went to a specific game, you changed
19 wiring connections depending on scoring values and switch
20 operation?

21 A No. There was a lot more involved than that, sir.

22 Q All right, tell me what more is involved.

23 A Well, as you change features on the game, you change
24 your basic circuitry to correspond to what you are trying
25 to do featurewise. So it is not a case of just moving the

1 wire.

2 Q I understand. But the basic circuit arrangement, there
3 was a pattern in a given company, wasn't there, as to what
4 it was going to look like?

5 A I am sorry. I do not understand the question.

6 Q Well, we have here the wiring diagram for the Flicker
7 game.

8 Can you agree with me, sir, that if --
9 Do you have a copy of that available to you?

10 A Yes, I do.

11 Q Start in the upper left-hand portion of that drawing.

12 Wouldn't that be essentially the same from
13 one electromechanical pinball game to the next, and; that is,
14 the game over switches and the player relays and the bonus
15 zero relays and such?

16 A Well, you are getting down to the basic functions of
17 game over, relays. They basically remain the same. They
18 could possibly change, but they basically remain the same.

19 Would that be correct?

20 A It could be changed in various ways, yes.

21 Q If I continue on down the drawing, I see different --
22 well, so I see if I see those things correctly.

23 Looking at the upper half of the drawing, I
24 see some coils which the relays, about the middle of the
25 drawing. The first one I see says, "Bon & Out of the

1 Q It would change whether it was a one-player game or a
2 two-player game or a four-player game?

3 A Or you had to tie something featurewise into it, it
4 could change.

5 Q Continuing on, would it be correct, sir, that an element
6 that I am looking at here called a bonus unit disk, which is
7 a rectangular thing about two-and-a-half feet in from the edge of
8 the drawing -- well, it would be in the area H-9, and, your
9 Honor, the letters I am referring to are down the side of
10 the drawing and the numbers are across the bottom. It is
11 much in the manner of a road map to locate things on the
12 drawing.

13 Here I see a bonus unit disk. Was it common
14 in pinball games the period that we are talking about to
15 include a bonus unit disk as part of the design?

16 A Yes.

17 Q So that might be changed depending on the amount of
18 bonus you were going to give or when you were going to give
19 the bonus, would that be correct?

20 A It could be changed in various ways, yes.

21 Q If I continue on down the drawing, I see different --
22 well, tell me if I see these things correctly.

23 Looking at the upper half of the drawing, I
24 see some coils along the bottom, about the middle of the
25 drawing. The first one I see says, "Bonus Unit Step-Up

1 Solenoid."

2 Do you see that? That is at F-11.

3 A On the bottom half?

4 Q I am sorry?

5 A On the bottom half did you say?

6 Q If I said bottom half, I misspoke. I meant upper half.

7 THE COURT: Bottom part of the upper half.

8 THE WITNESS: Okay, fine.

9 BY MR. GOLDENBERG:

10 Q Do you see that bonus unit step-up solenoid?

11 A Yes.

12 Q So if it was common to have a bonus unit, was it common
13 to have a bonus unit step-up solenoid?

14 A Yes.

15 Q If I continue along at the bottom of the upper half,
16 generally in line with the letter F, I see a whole number
17 of coils with legends by them, indicating generally what
18 the function of that coil is, is that correct?

19 A Yes.

20 Q Those coils in some cases may be solenoid coils, is
21 that correct?

22 A That is correct.

23 Q In other cases they may be relay coils?

24 A That is true.

25 Q That general arrangement was common throughout pinball games

1 of that time, was it not?

2 A Yes.

3 Q I understood in five years you designed 50 games for
4 Williams, is that correct?

5 A Roughly.

6 Q Roughly?

7 A Approximately, yes.

8 Q Did you do the playfield design for all of those games?

9 A Yes, I did.

10 Q Did you do the electrical design?

11 A Initial electrical design, yes.

12 Q I am sorry?

13 A Initial electrical design, yes.

14 Q What do you mean by the initial electrical design?

15 A Well, when the game went into production, I would turn
16 over my circuits to a circuit man, who would clean the cir-
17 cuits up to put them into production.

18 Q Would he change your design or just reduce it to per-
19 manent drawings?

20 A There might be slight changes if they can save a part
21 here or there. When I made the light wood, of course, we
22 weren't that particular on saving a switch.

23 Q So, therefore, sir, in that period you were able to
24 design 10 new games a year, both from the point of view of
25 playfield design and what you have called initial electrical

1 design, is that correct?

2 A Some of the playfields, sir, were used on more than one
3 game.

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- 1 Q Does this 50 then include --
- 2 A Yes.
- 3 Q So they just changed the name of the game; is that what
- 4 you are telling me?
- 5 A Not necessarily the name. We would go and maybe make a
- 6 four-player or two-player or single-player Atom Ball. The same
- 7 playfield could conceivably have been used in a four-player
- 8 and a two-player.
- 9 Q I see, but you were, therefore, able to design on the
- 10 average of ten games a year both from the playfield design
- 11 point of view and the electrical point of view, is that
- 12 correct?
- 13 A Correct.
- 14 Q You found that a task that you could accomplish quite
- 15 well with your knowledge of pinball and your knowledge of
- 16 pinball circuitry, is that correct?
- 17 A Yes, sir.
- 18 Q Do I understand your testimony correctly, sir, that to
- 19 your knowledge, none of your fellow employees at Williams at
- 20 the time you were employed there had any skill in electronic
- 21 design, is that correct?
- 22 A None of the people I was associated with in the construc-
- 23 tion of pinball games had any skill.
- 24 Q And you had no such skills?
- 25 A No, sir.

1 Q If I understand it correctly, you have no such skills
2 today?

3 A That is true, sir.

4 Q The design procedure that you described while you were
5 employed at Williams of first designing the playfield and
6 then the electronics, you say that has now changed at Bally
7 Manufacturing, is that correct?

8 A The procedure of taking the game through from the initial
9 concept to where it is ready for production has now changed.

10 Q Do you supervise the people at Bally who are responsible
11 for electronics design?

12 A No, sir.

13 Q Do you supervise the people at Bally who are responsible
14 for programming?

15 A No, sir.

16 Q Who does that?

17 A It is done under a different department, sir.

18 Q What is the different department?

19 A I would presume it is called the electrical or electronic
20 department.

21 Q Do you know who heads that department?

22 A Yes, John Bruserv is the vice president in charge of
23 programming electronic work.

24 Q You have no electronic engineers reporting to you, I
25 gather, is that correct?

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Clark - cross

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1 A I have a programmer that is assigned to us to work on the
2 games, not under my jurisdiction.

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1 Q He's not under your jurisdiction.

2 A Right.

3 Q He comes from this other department?

4 A That's correct.

5 Q How about electronics engineers, do you have any ele-
6 tronics engineers who work for you?

7 A No, I don't.

8 Q When you need an electronics engineer, electronic
9 engineering help, where do you get that?

10 A From the electronic department.

11 Q So your present responsibilities include a responsibility
12 for creating the playfield and the rules of the game, the
13 theme of the game. Is that correct?

14 A Yes, sir.

15 Q And mechanics, such mechanical design as may be involved?

16 A Yes, sir.

17 Q Now, would it be a correct understanding, when you've
18 completed the playfield design and have written the rules
19 of the game, if I may call it that, you then take it to a
20 computer programmer who writes the computer program?

21 A That's true.

22 Q Now, at some point the computer system has to be con-
23 nected up to your playfield design, does it not?

24 A Yes.

25 Q Who does that? Does your department do that or does

1 the electronics department do that?

2 A We're given the chip from the electronic department to
3 put into the computer CPU.

4 Q Well, how about wiring up physically --

5 A We're given that information.

6 Q No, sir. Hear my question.

7 don't you -- physically connecting the output of the
8 computer circuit board to a given lamp or a given switch.

9 Who does that?

10 A The information for wiring is given to us by the elec-
11 tronic department in order for us to cable the machine.

12 Q And there's nobody in your department who is capable
13 of doing that, I gather?

14 A That's right.

15 Q Have you attempted to have any of the people who report
16 to you learn electronics or learn computer programming?

17 A No, sir.

18 Q Why not?

19 A Hasn't been a requirement.

20 Q Do you have a view, sir, whether it's easier for the
21 electronics engineer to learn something about pinball so he
22 can program for pinball, or whether it's easier for a person
23 with pinball experience to learn electronics?

24 A I wouldn't know, sir.

25 Q You have no view on that?

1 A No, sir.

2 Q Do you know anyone of background such as yourself that
3 has learned electronics, computers, so that you don't have
4 to depend upon the electronics department?

5 A Would you mind repeating that question?

6 Q I'll have the reporter read it back, and then if you
7 don't understand it I'll restate it.

8 Q (Read by the reporter.)

9 BY THE WITNESS:

10 A No, sir.

11 MR. GOLDENBERG: I have no further questions.

12 BY MR. LYNCH:

13 Q Mr. Clark, you indicated you joined Bally in 1975.

14 A Yes, sir.

15 MR. LYNCH: May it please the Court, your Honor,
16 there's some brief references to some defendants' exhibits,
17 if I can give your Honor the book. This is 1 to 4. We only
18 have 12.

19 BY MR. LYNCH:

20 Q Mr. Clark, when you came -- when you came on board at
21 Bally there was an electronic Flicker project underway,
22 correct?

23 A Yes, sir, something underway.

24 Q And it was under the charge of Mr. Bracha, correct?

25 A That's correct.

Clark - Cross

1 Q Now, Mr. Bracha was an electronics engineer, wasn't he?

2 A Yes, sir.

3 Q And when you first encountered Mr. Bracha you found
4 that Mr. Bracha understood such things as microprocessors
5 and microcomputers and electronics. Correct?

6 A I don't know. I have no knowledge.

7 Q You don't know whether he did?

8 A No. That's true.

9 Q But there were engineers on hand at Bally at the time
10 you arrived in January of 1975 that had such knowledge?

11 A There could have been, yes.

12 Q Did you know a Mr. Engelhardt?

13 A When I joined Bally I met him.

14 Q Do you know if he had that background?

15 A I presume he did.

16 Q At the time you joined Bally there were a number of
17 processes or projects -- at the time you joined Bally there
18 were a number of projects underway to convert various
19 gaming machines to solid state. Isn't that correct?

20 A I don't know, sir.

21 Q You don't remember that?

22 A I don't know.

23 Q Now, you were the Bally district manager for the

24 A Yes, sir.

25 Q Now, you were the Bally district manager for the

1 Q I show you a copy of Exhibit 4-0, a Bally evaluation
2 team meeting, indicating at the bottom of Exhibit 4-0 that
3 you received a copy.

4 THE COURT: What is that number?

5 A MR. LYNCH: 4-0, your Honor, not 40, 4-0.

6 BY THE WITNESS:

7 A Yes. I do remember this.

8 BY MR. LYNCH:

9 Q Now, at the bottom part of Exhibit 4-0, there is an
10 indication there was an electronic flipper project, correct?

11 A That is right.

12 Q That electronic flipper project is the project that
13 eventually wound up producing the Bally commercial games
14 that are controlled by microprocessors, correct?

15 A I believe so.

16 Q Now, this Exhibit 4-0 indicates that you were on a
17 board that would evaluate how Bally would undertake this
18 electronic flipper project, correct?

19 A I do not recall the board, sir.

20 Q You do not recall the board?

21 A No, sir. I do not.

22 Q Do you recall undertaking any considerations at that
23 time about the Bally flipper project?

24 A No, sir.

25 Q I show you Exhibit 4-R, a memo dated April 7, '75,

1 from Mr. Joe Robbins to all members of the Bally electronic
2 flipper review team.

3 Your name also appears as a copy addressee
4 of that.

5 A Yes.

6 Q Does that refresh your recollection, Mr. Clark, as to
7 your being on that review team?

8 A No, sir.

9 Q Does it refresh your recollection as to the expertise
10 of Mr. Bracha and Mr. Engelhardt?

11 A No, sir.

12 Q I show you what has been marked as Exhibit 4-T,
13 Mr. Clark, departmental correspondence having to do with
14 electronic flipper meeting held May 2nd, 1975.

15 It indicates that you were in attendance at
16 that meeting.

17 A I am very vague on this.

18 Q I see. So you do not recall this meeting either where
19 it was indicated it was decided we would not go the Nutting
20 way?

21 A No, sir. I do not.

22 Q Do you remember at the time that you joined Bally
23 that there was under consideration whether Bally should
24 adopt the Milwaukee approach or what was called the
25 Milwaukee approach in some documents, or the Nutting way,

1 or the way that they had begun in house to design an
2 electromechan -- I mean, a solid state flipper game?

3 A I do not recall it, sir.

4 Q You have no recollection of that?

5 A No, sir.

6 Q Finally, you indicated, Mr. Clark, that you had been
7 familiar with a number of -- the Dynamite game made by
8 Allied Leisure?

9 A I had seen it, yes, sir. I had seen it at their
10 store in the area of a computer controlled play-

11 area.

12 Q Did you see any other games at that place?

13 A No, sir.

14 Q Now, during the time you were there, do you recall or do you have
15 any recollection of whether the board of directors
16 of Allied Leisure ever used the group prepared by
17 Mr. Brown?

18 A As far as I know, they did, yes.

19 Q Now, I have no further questions, your Honor.

20 THE COURT: One or two questions for your Honor, do
21 you recall?

22 THE COURT: All right, thank you.

23 BY MR. BROWN:

24 Q I have just testified in response to a question for

25 your Honor that the arrangement on March 15, 1964, was

Yes sir

Q Did you also see at the 1975 MOA show any solid state microprocessor controlled games being exhibited or shown by Atari--the 1974 MOA show?

A I do not recall that, sir.

Q You do not recall that.

I show you what has been marked as Exhibit 4-X, a memo from Mr. Joe Robbins to Frank Bracha showing a copy to you indicating that Mr. Robbins and a Mr. McMurdy visited California, the factory of Ramtec, and looked at their solid state 4004 set-up of a microprocessor controlled pinball game.

Do you remember any reports on that game?

A No, sir.

Q Now, during the time period, do you recall or do you have any knowledge, Mr. Clark, as to whether the commercial coin-operated pinball games of Bally used the design prepared by Mr. Bracha?

A As far as I know, they did, yes.

MR. LYNCH: I have no further questions, your Honor.

MR. TONE: One or two questions, your Honor, on redirect.

REDIRECT EXAMINATION

BY MR. TONE:

Q I think you testified in response to a question for Mr. Goldenberg that the arrangement on Plaintiff's Exhibit 55,

Clark - redirect

the flipper schematic, was common to pinball games of that period. Do you recall that?

A. He asked several questions, sir, asking if they were common to pinball games. The answer was yes.

Q. Is it fair to say then that the electromechanical flipper, which is the machine in the courtroom on the left marked Plaintiff's Exhibit 332, was typical of the electromechanical pinball game, coin-operated, as it existed in the middle 1970's?

A. Yes, sir.

MR. TONE: Nothing further, your Honor.

THE COURT: Any recross?

MR. LYNCH: Nothing from me, your Honor.

MR. GOLDENBERG: Nothing.

THE COURT: Thank you, Mr. Clark. You may stand down.

_(Witness excused.)

MR. TONE: We have another witness, your Honor.

THE COURT: All right.

MR. TONE: Mr. Schnayer will handle the direct examination.

MR. SCHNAYER: I call to the witness stand Dr. James Schoeffler, please.

JAMES SCHOEFFLER, PLAINTIFF'S WITNESS, SWORN.

DIRECT EXAMINATION

1 BY MR. SCHNAYER:

2 Q Please state your name and residential address.

3 A My name is James D. Schoeffler, S-c-h-o-e-f-f-l-e-r,
4 4090 Carroll Boulevard, C-a-r-r-o-l-l, University Heights,
5 Ohio.

6 Q Please describe your formal education beginning with
7 college and giving appropriate dates.

8 A I received a Bachelor of Science degree in electrical
9 engineering in 1955 from Case Institute of Technology in
10 Cleveland, Ohio.

11 I received a Master's degree, Bachelor of
12 Science degree in electronics in 1957 also from Case Institute
13 of Technology.

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Schoeffler - Direct

1 MR. GOLDENBERG: Your Honor, if it will shorten this
2 matter, we are prepared to stipulate that Dr. Schoeffler has
3 all the credentials and background set forth in his resume,
4 which --

5 THE COURT: Do you have a resume there that is
6 being offered as an exhibit?

7 MR. SCHNAYER: Yes, I think it would be helpful,
8 however, because this witness has particular background --

9 THE COURT: I understand that, but anything that
10 is on the exhibit, why don't you just let me read that part,
11 and then you can cover it.

12 I mean, I don't mean that you can't cover any-
13 thing on here, but rather than duplicate it, I will look it
14 over.

15 MR. SCHNAYER: Okay, your Honor.

16 BY MR. SCHNAYER: Dr. Schoeffler is a member of and some of his other
17 Dr. Schoeffler, referring to PX-425, I would ask if you
18 could identify that, please.

19 A. That is a copy of my resume.

20 Q. Was that prepared under your direction?

21 A. Yes, it was.

22 Q. Is it accurate, to the best of your knowledge?

23 A. To the best of my knowledge.

24 Q. There is a section of your resume entitled to that?

25 "Publications." Does that list of publications included

Schoeffler - Direct

1 in that section of your resume accurately reflect all of the
2 publications?

3 A Yes, it does, to the best of my knowledge.

4 Q Approximately how many publications have you authored
5 or co-authored?

6 A Approximately 100 since early '60s, starting around
7 1961.

8 Q How many of those publications relate to microprocessor-
9 based systems?

10 A Those that are directly related to microprocessor
11 systems, probably about 20 percent.

12 Of course, none of those in the early '60s.

13 Most of the others related to real time com-
14 puter systems and their applications.

15 Q We will pass over some of the professional societies
16 that Dr. Schoeffler is a member of and some of his other
17 credentials.

18 Dr. Schoeffler, what is your present occupa-
19 tion?

20 A I am professor and chairman of computer and information
21 science at Cleveland State University, Cleveland, Ohio.

22 Q How long have you been in that position?

23 A I joined Cleveland State in 1975 in that position.

24 Q Did you have any teaching experience prior to that?

25 A Yes, I did.

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1 Q Could you please explain what teaching experience you
2 had?

3 A Certainly. I began teaching formal university courses
4 during my doctoral program at M.I.T.
5 Right after leaving M.I.T. in 1960, I joined
6 Case Institute of Technology in the department of electrical
7 engineering, and for the next 15 years, up until I left for
8 Cleveland State in 1975, I taught a number of courses,
9 ranging from electric circuit design, electronic circuit
10 design, network theory, automatic control, computer control
11 courses in the later years, data acquisition, signal processing
12 kinds of courses, things of this nature.

2

13 A All of those courses are relevant to microprocessors
14 in one aspect or the other, especially in the application.

15 Q Other than courses that you have taught at universities,
16 have you taught any courses which are relevant to the
17 computer control art -- computer control systems, because we

18 A Yes, I have. When I joined Case in 1961, I went back
19 to Case initially because of the research group under the name
20 which was a group that was formed to do research and develop
21 ment in on-line industrial control systems.

22 In those years the main emphasis was just
23 beginning to be applied to the control of industrial processes
24 and industrial processes, the making of paper, steel, and
25 the like, and it was a very difficult time as an industrial

ure

1 Q What courses do you presently teach at Cleveland State
2 University?

3 A At the present time the general area of courses would
4 include courses in computer operating systems, real time
5 software systems, software engineering type of courses,
6 courses in computer architecture, studying the detail
7 organizations and application of microcomputers, mini-
8 computers, and the design of communication devices among them
9 and the like, programming language system courses and the
10 like.

11 Q Which, if any, of those courses have applications to
12 the field of microprocessors?

13 A All of those courses are relevant to microprocessors
14 in one aspect or the other, especially in the application.

15 Q Other than courses that you have taught at universities,
16 have you taught any courses which are relevant to the
17 computer control art -- computer control systems, excuse me?

18 A Yes, I have. When I joined Case in 1961, I went back
19 to Case primarily because of the systems research center there,
20 which was a group that was formed to do research and develop-
21 ment in on-line industrial control applications.

22 In those years the mini-computer was just
23 beginning to be applied to the control of industrial problems
24 and industrial processes, the making of paper, steel, and
25 the like, and it was a very difficult field. An industrial

Schoeffler - direct

826

1 consortium, the major computer vendors, the major application
2 industry, steel, paper, and the like, and the major suppliers
3 of equipment to that industry, all got together and funded
4 this research group at Case, and for the next 15 years and
5 to the present day I still work very much in that field.
6 We have carried out research with industrial support in that
7 kind of an area.

8 As a consequence, I became heavily involved in
9 continuing education kind of courses outside of the university
10 for practicing engineers. This was new technology that
11 was being applied, the mini-computer in the '60's and the
12 microcomputer in the '70's.

13 So, for example, starting about 1963 at Case
14 we started a continuing education course to teach the
15 methodology of data acquisition and computer control to
16 practicing engineers. This included all of the aspects of
17 gathering signals, handling the noise, the multiplexing,
18 and other kinds of problems that were important in those
19 years, and that continued on through about 1973, both for
20 our sponsors and for the general engineering public who
21 wished to attend.

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1 In the early '70s the rate of change of
2 technology was very great, the late '60s, around '69 and
3 '70, and so a group of 14 midwestern universities formed a
4 group called the National Engineering Consortium, the N.E.C,
5 whose objective it was to take leading technological areas --
6 and computer control was one, and microcomputers, et cetera,
7 later on, was another -- and to offer courses to practicing
8 engineers on a continuing education basis to attempt to
9 bring them up to the state of the art.

10 I began teaching such a course with the
11 N.E.C. in the early '70s, and continued through the decade.

12 The other purpose of this course was to in-
13 vite faculty from universities in who were not up to the
14 state of the art, in the hopes that they could take that
15 material back as a basis of a course, and hence make the
16 technology more practical more quickly.

17 In about 19 -- I'm sorry.

18 That particular course that I taught was on
19 real time computer control, the software organization and
20 how to handle problems of the type.

21 Of course at that time that was applied
22 strictly with mini-computers, which are larger of course
23 than microcomputers.

24 As the microcomputers came into the field in
25 the early '70s, it was determined that there was a need both

Schoeffler - Direct

1 for educating practicing engineers in microcomputers them-
2 selves -- as we just heard, an engineer who was in school
3 when this technology burst upon the scene just didn't have
4 a chance to learn it in a straight-forward way.

5 And so the N.E.C. added courses in micro-
6 computers of one kind or another.

7 And the software course that we were given
8 was upgraded, because most of that was equally applicable
9 in the microcomputer area as it was in the minicomputer
10 area. And, in fact, we changed the name to Minicomputer/
11 Microcomputer Real Time Software, from the older name.

12 I then, (in late 1974 -- it was about, I
13 think November of '74 -- was asked to participate in the
14 second course with the N.E.C. on microcomputer architecture.
15 And I produced the first set of notes for that course at the
16 end of '74. And we gave the first offering of that course
17 here in Chicago in fact in late '74 or early '75.

18 The other two main places where I worked
19 were the Computer Society, which is a professional society
20 devoted to computer science people -- interested more in the
21 technical or real life software and its applications in
22 areas such as this. And the result of that tutorial, those
23 notes, were turned into a book.

24 In a similar fashion, it was so difficult
25 in universities to get information about industrial

1 In addition, through my work at Case, all of
2 the companies that sponsored us were equally eager to get
3 into the microcomputer area and try to apply this new tech-
4 nology. And so I participated in numerous in-house courses;
5 seminars, courses, ranging from one day to a week, anything
6 from straight lecturer to a hands-on kind of an experience.
7 And that went on continuously, and still
8 goes on. I still give those courses today.

9 I've lectured; been invited abroad to lecture
10 on the subject. For example, in the early '70s the University
11 of Lunde in Sweden decided to start up a computer control
12 group like the one at Case, and I spent two Januaries in
13 Sweden, lecturing to them on the area over the next couple
14 of years. a professor, but I spend a great deal of time
15 consulting. And more recently the Arab school had
16 a similar program on microcomputer architecture and its
17 applications, and I spent a few days lecturing there.

18 The other two main places where I worked later
19 were the Computer Society, which is a professional society
20 devoted to computer science people -- invited me to give a
21 tutorial on real time software and its applications in
22 areas such as this. And the result of that tutorial, those
23 notes, were turned into a book.

24 In a similar fashion, it was so difficult
25 in universities to get information about industrial

1 applications of both minicomputers and microprocessors and
2 microcomputers, that the IEEE, which is the major electrical
3 engineering professional society, invited me to produce a
4 book, which I co-edited -- I didn't write the whole book --
5 co-edited with a student of mine, where we selected the key
6 technical articles that had been produced over the years in
7 all aspects of using computers in the various situations I
8 have named.

9 And that was produced by this professional
10 society, and over 15,000 copies of that book were sold.

11 Q Dr. Schoeffler, have you had any experience in private
12 industry?

13 A I have been in the university since I graduated from
14 M.I.T., as a professor, but I spend a great deal of time
15 consulting.

16 And so all of my experience with industry has
17 been in the consulting mode.

18 Q Has any of your experience in that industry been related
19 to a microprocessor base in other computer systems?

20 A Oh, yes.

21 Of course, I consult in this area, namely, the
22 on-line computer control; and up through the minicomputer
23 area, of course, this was the only area.

24 As we moved into the microcomputer area, it
25 switched.

1 Specific examples of consulting activities in
2 the microcomputer area: In the early '70s, I think it was
3 late '72 or '73, I became a consultant for the Ford Motor
4 Company, who was attempting to use microcomputers for on-
5 board control of the automobile. And that consulting
6 activity proceeded up through about 1976.

1 In parallel with that, about a year later,
2 Ford also asked me to undertake a research study on the
3 application of microcomputers in a manufacturing environment.
4 And that project went on through 1975; became inactive for a
5 while, then became active about three years ago, and is
6 still currently active.

7 My major consulting activities in the micro-
8 computer area have been in the product design area, working
9 with companies that we would term instrumentation companies.
10 Companies whose names might be a Foxborough or Leeds and
11 Northrup, or a company like that, who makes products for
12 industrial control. And all of the minicomputer-based systems
13 were transformed into microcomputer systems.

14 This required a tremendous effort in the
15 design of the architecture of these systems. This evolved
16 into, instead of single, stand-alone integrated systems,
17 rather, numerous individual modules that were coupled with
18 communication systems.

19 And I've participated, as a result, ever
20 since the early '70s, and still do, in the design of
21 controllers, the software organization of the systems, the
22 communication systems.

23 And the things that are critical in that area
24 are the way you back up the system and do error recovery when
25

1 there's a failure.

2 So that's the kind of consulting activity
3 I've been involved in.

4 Q Approximately how much of your time have you spent on
5 consulting and research generally?

6 A I spend about 20 percent of my time consulting.

7 Formally, I spend about one-third of my non-
8 consulting time on research.

9 Q Approximately how much of your consulting and research
10 time involved microcomputer systems or their applications?

11 A Well, none, of course, before the early '70s. But
12 after that, as a rough figure, it's probably two-thirds,
13 three-quarters, something like that, directly and indirectly,
14 and the like.

15 Q Was electrical noise involved in your work on real time
16 systems?

17 A Electrical noise turns out to be one of the dominant
18 considerations in real time systems, whether it's a small
19 system or a large system.

20 And in particular, in recent years, with the
21 use of microcomputers in the industrial environment, with
22 communication of high speed going around, noise is a
23 critical factor; and the design and the communication, as
24 a consequence, critical. And I've been heavily involved
25 in the design of such systems as a consequence.

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2 MR. SCHNAYER: Your Honor, at this time I would
3 ask the Court to recognize Dr. Schoeffler as an expert in the
4 field of microprocessor applications and operations.

5 THE COURT: All right. You may proceed.

6 BY MR. SCHNAYER:

7 Q Have you reviewed, in preparation for your testimony,
8 the patent in suit, the prior art relied on by the defendants,
9 and testimony and other materials relating to this case?

10 A Yes, I have.

11 Q And based on your review of the patent in suit, the
12 prior art relied on by the defendants, and the testimony and
13 other materials relating to this case, what was the contri-
14 bution if any that was made by the invention to the pinball
15 industry?

16 A I think this invention had a very significant contribu-
17 tion to the pinball industry.

18 Based on what I reviewed, and in fact testi-
19 mony like we just recently heard, it is clear that the pinball
20 industry for many years was a static industry, doing things
21 pretty much the same way: The same kind of components, the
22 same kind of control systems and the like.

23 MR. SCHNAYER: Essentially no electronic technology;
24 essentially no real electronic pinball game having been
25 achieved and showing up in the marketplace and the like. The
status quo kind of situation.

1 It's my understanding that the introduction
2 of this electronic pinball game, based on the Frederiksen-
3 Nutting patent, was a revolutionary game, and it turned the
4 industry around in a completely unforeseen way, in a very
5 short time.

6 MR. GOLDENBERG: Excuse me, Judge: Kind of a
7 voir dire question.

8 Is the witness reading from something?

9 THE COURT: Doesn't appear to me that he is.

10 THE WITNESS: I am not reading. I have an outline
11 of some notes.

12 MR. GOLDENBERG: May we be given a copy of those?

13 MR. SCHNAYER: We'll provide them.

14 MR. GOLDENBERG: We would like to have it before
15 the witness proceeds any further.

16 MR. SCHNAYER: He has a single copy.

17 THE COURT: Well, he may continue with his testimony.
18 But if he's using something in the course of his testimony,
19 counsel should have a copy of it.

20 MR. SCHNAYER: We'll provide you with that as soon
21 as --

22 MR. GOLDENBERG: Before we resume tomorrow morning,
23 I trust?

24 MR. SCHNAYER: Yes.

25 MR. GOLDENBERG: Thank you.

1 BY MR. SCHNAYER:

2 Q Could you continue, please, Dr. Schoeffler.

3 A Yes. I was trying to make the point that the introduc-
4 tion of this pinball game, this electronic pinball game,
5 was a revolutionary thing in the industry, and not an
6 evolutionary one, in that it was a sudden and dramatic change.

7 Based on my understanding of the pinball
8 games as they existed, and my understanding of the new elec-
9 tronic pinball game, it was not simply to take the controller,
10 that is, the electromechanical logic which carried out the
11 game rules in the pinball machine, and simply replace them
12 by an electronic equivalent.

13 If that were the case, it would be more of an
14 evolutionary kind of a change. But it wasn't this way at
15 all.

16 The Nutting et al. patent, that design, was
17 revolutionary in the sense it came up suddenly with a
18 brand new architecture that implemented the game rules and
19 controlled the pinball machine in a way that just was not done
20 before.

21 It was a radically new architecture or
22 organization for the control system. And the net result of
23 this, it had many advantages, and it rather quickly, in my
24 understanding, displaced the old technology.

25 That's the definition of a revolutionary
in comparison to an evolutionary change.

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Schoeffler - direct

1 The advantages were the ones that we have
2 heard about; namely, new features, ease of manufacturing,
3 reuse of the hardware so that, for example, you could change
4 the game rules by changing the program, things of this
5 nature.

6 But the net result of this was a sudden abrupt
7 change and a moving of the pinball industry into the so-
8 called electronic era, sort of wedding the microprocessor,
9 microcomputer in electronics fields with the pinball industry,
10 and it has remained that way ever since.

11 Q Did this involve any technical problems?

12 A In the early '70's to someone who was not in the field
13 looking at trying to control a pinball game with a computer
14 or a microprocessor thing, it may have looked relatively
15 easy, but we have to put into perspective what it was like
16 in the early '70's.

17 The microcomputer had just been developed,
18 and it showed marvelous promise, and the microcomputer
19 vendors, of course, are in the same situation where they have
20 a solution looking for a problem. It is a new technology,
21 and it is not being used except perhaps in calculators. And
22 as a consequence, a lot of hype, or advertising, marketing
23 kind of information is developed attempting to create market
24 for a new product.

25 So it is sort of natural that the problems

1 would be dismissed.

2 It reminded me exactly of the situation we
3 went through in the '60's where the absolutely identical
4 sequence of events occurs; namely, the mini-computer sprang
5 on the field, which was a marvelous development and a reduc-
6 tion in price of computers. And the mini-computer vendors
7 did their darndest to try to create markets for them and
8 sell them.

9 Well, the market that I was involved in was
10 industrial computer control. So, as the theory would go, you
11 can control your steel mill, your paper mill, your glass plant,
12 with a computer and increase productivity and do all these
13 things, et cetera.

14 The process control industry was not nearly
15 as fortunate as the pinball industry. There was no sudden
16 abrupt invention which came along and made a change very
17 quickly. It was 10 years of very bitter effort attempting
18 to solve the problems, to understand the problems, and to
19 actually succeed in getting a computer to run a plant.

20 You just cannot look at it and say it is not there and
21 jump in and do it and do not think ahead. You have to
22 recognize it; otherwise you will never do the planning, et
23 cetera, so that this thing can come out.

24 You have to recognize, for example, in the case
25 of the pinball game the rather severe economic conditions.

Schoeffler - direct

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2 The consulting work I did in the '60's with
3 IBM, I actually was a full-time consultant for a year on leave
4 with the university. We were attempting to put mini-computers--
5 and IBM mini-computer in a paper-making plant doing that.

6 My one recollection of that year is an article
7 in a computer paper which indicated at that point in time
8 there were exactly as many computers being installed in the
9 paper industry as being de-installed or thrown out of the
10 paper industry because they did not work.

11 The problems of getting a computer to interact
12 in an industrial environment, to get around the noise problem
13 and other problems, were really very difficult and over-
14 whelming. It took many good people working for many years
15 to get around those problems.

16 Coming back to more directly answer your
17 question, what were the problems? I thought about this, and
18 I have listed three.

19 One, if you are going to do a project like
20 this, you have to recognize that there really were problems.
21 You just cannot look at it and say it is straightforward,
22 jump in and do it and do not think ahead. You have to
23 recognize it; otherwise you will never do the planning, et
24 cetera, so that this thing can come out.

25 You have to recognize, for example, in the case
of the pinball game the rather severe economic constraints,

Schoeffler - direct

1 that you are not working at a Bell Labs or an aerospace
2 company where it makes no difference what the problems are.
3 You just go in and solve them at any cost.

4 In the case of the work with Ford on the
5 automobile, applying the microcomputer there was very
6 difficult. Whenever the control systems associated with the
7 car, however, get in the way of the microcomputer, you go out
8 and change them; whereas with the pinball machine, the
9 economics are not with upgrading the solenoids and the
10 switches and making them more expensive and the like. The
11 product would just not be economical and feasible. It would
12 not be competitive.

13 Secondly, once you recognize and admit that
14 there really are problems, you have to recognize how hard
15 they are and be willing to put the resources in to in
16 solving them.

17 That was the lesson we learned from the '60's
18 in the process control field, and this is necessary even
19 today in any microcomputer project such as a pinball control
20 system.

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Schoeffler - Direct

1 Then after you do all that, of course, you have
2 to be smart enough to solve the problems, and that is a problem
3 all by itself.

4 Q Does a real time response have anything to do with the
5 problems in any of the answers that are taught in the patent?

6 A Yes, the pinball game clearly is the kind of system I
7 would term a real time system, where you are demanding
8 response of the system to events that occur in time that a
9 human being expects to see happen or that the game itself
10 requires to happen.

11 When the ball hits a bumper, you expect it to
12 be thrown back. When you hit a target, you expect a light
13 to light and so on.

14 So it is not like a calculator. You have to
15 do it at the instant that the game requires it.

16 So I would term it a real time kind of appli-
17 cation.

18 THE COURT: Would you give me your definition of
19 real time?

20 THE WITNESS: Yes. I would call a real time system
21 one that must respond to events quickly enough to affect its
22 own environment, and so associated with each event is some-
23 thing I would call its response time. You have to determine
24 that, and then your entire design must be such that you can
25 guarantee and assure that the system can respond within that

Schoeffler - Direct

1 time.

2 Is that satisfactory?

3 THE COURT: Yes, thank you.

4 MR. SCHNAYER: Because of the complexity of the
5 subject matter, I will have Dr. Schoeffler go through some
6 basic explanation concerning the technology involved, and
7 Dr. Schoeffler has prepared some drawings under his super-
8 vision.

9 THE COURT: All right.

10 BY MR. SCHNAYER:

11 Q Dr. Schoeffler, will you define what a general purpose
12 computer is?

13 A Yes, I prepared these drawings, and if it is all right,
14 I will talk from those.

15 THE COURT: Sure, go ahead.

16 BY MR. SCHNAYER:

17 Q Do you have a pointer, if you want to?

18 A I have one, thank you.

19 This first drawing shows a general purpose
20 computer right here. It consists of something that we
21 would call a central processing unit and other devices, such
22 as printers, keyboards, displays for showing the information,
23 and some kind of tapes or disks for files that would be in a
24 system like this.

25 Basically a general purpose computer is an

1 information processing device. The whole idea is that the
2 user of this system specifies an application and somehow
3 provides the information needed to carry out the application,
4 and then the basic work itself is carried out by the computer.
5

6 An example might be a payroll kind of applica-
7 tion, where we could like the computer to prepare checks each
8 month. It is clear we have to tell it the hours worked by
9 each employee and similar kinds of things, and it is clear
10 we have to tell it the salary or the hourly rate of the
11 individual and the like.

12 The computer is quite capable of carrying out
13 the calculations involved, multiplying the hours times the
14 rate to get the amount and the like.

15 In addition, of course, in creating a check,
16 we have to calculate all the deductions and we have to keep
17 track of year-to-date earnings and the like, and so things
18 like files, as shown out here on secondary storage, outside
19 the main storage of the general purpose computer, would con-
20 tain your past years records. The computer would bring it
21 up, process that information, and perhaps either display
22 the results on a terminal or print the check or the report
23 from the payroll application.

24 It is general purpose -- and I use the word
25 "general purpose" to differentiate it from the kind of
microcomputers that we will be talking about in the pinball

John Schoeffler - Direct

1 application -- it is general purpose in the sense that the
2 computer itself is not designed for any one specific industry
3 or any one specific application. So everyone tends to use
4 the same computer, and you do your payroll on it and you do
5 your production planning on it and things of that nature.

6 Q Could you identify the exhibit number which is contained
7 on that drawing you are referring to? (microcomputer).

8 A Yes, this is Exhibit PX-385, a computer, but it is
9 basically a very small computer. It is small physically in
10 that sense, and it is also small in the sense of its capa-
11 bilities; that is, when we pay the large amount of money that
12 we pay for a general purpose computer, we expect it to do
13 a lot, files, printers, and devices like that, but generally
14 microcomputers are sized according to the application and
15 without a lot of excess. So it is small in capability or
16 throughput and size.

17 Now, in this diagram we see several of the
18 chips which make up what I call a microcomputer; namely,
19 one of the chips -- a chip is simply a small device about
20 the size of a coin on which we have embedded many, many
21 electronic circuits. It is the creation of the technology
22 to make circuits small like that that makes the whole computer
23 technology available to us.

24 This chip then is the heart of the computer,
25 and it is commonly called the central processor chip. 1

Schoeffler - direct

Q I would ask you as you testify and refer to a particular poster that you identify the number on the poster.

Dr. Schoeffler, would you please define what a microcomputer is?

A The next chart I prepared, which is Exhibit PX-386, attempts to do this, and especially to make the distinction between the general purpose and the microcomputer.

A microcomputer is a computer, but it is basically a very small computer. It is small physically in that sense, and it is also small in the sense of its capabilities; that is, when we pay the large amount of money that we pay for a general purpose computer, we expect it to do a lot, files, printers, and devices like that, but generally microcomputers are sized according to the application and without a lot of excess. So it is small in capability or throughput and size.

Now, in this diagram we see several of the chips which make up what I call a microcomputer; namely, one of the chips -- a chip is simply a small device about the size of a domino on which we have embedded many, many electronic circuits. It is the creation of the technology to make circuits small like that that makes the whole computer technology available to us.

This chip then is the heart of the computer, and it is commonly called the central processor chip. I

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Schoeffler - direct

will try to use that terminology when I talk about it.

It is the chip that can do the arithmetic and other kinds of functions that we mention that a computer can do, as we see, for example, a calculator calculating numbers and the like.

There are two other groups of chips shown on this board. Over in this section of the board we have the ROM memory chip, the ROM meaning the read only memory chip, being the area where the computer program itself is normally stored.

A major distinction between the microcomputer and the general purpose computer is the fact that the general purpose computer, since it is used for many applications, cannot have a program permanently stored in it; whereas when we dedicate a microcomputer to an application like the pinball, there is only one program it is ever going to run and I put it permanently in, and hence, the terminology "read only."

You don't change it. It is just read once it is put in there.

To keep track of the data that is changing, the status of the switches, what the current score is, how many coins I have inserted or the like, I have to have memory that I can write in and change, and this is the so-called RAM memory. One or more chips that make up the RAM, random

Schoeffler - direct

1 access or writeable memory, are used in conjunction with the
2 program and the processor to do calculations and to carry
3 out an application.

4 Q Is the RAM memory like a scratch pad?

5 A The RAM memory is like a scratch pad. If I am doing a
6 calculation and I have to save some intermedial results, I
7 write them down in the scratch pad or in the RAM memory and
8 keep it right here.

9 In the case of the pinball game, it has to keep
10 track of everything that is going on because we can't write
11 in this memory over here (indicating).

12 Now, the remainder of the microcomputer are
13 all the other chips that are supplied by the computer vendor--
14 generally microcomputer chips are supplied by a microcomputer
15 vendor, and he supplies essentially central processor chips,
16 memory chips, and on this diagram chips that do inputting
17 and outputting of data.

18 The computer is useless if I can't get
19 information from the switches because it is when the ball
20 hits the switch that I have to do some calculation on the
21 score, and so these chips under control of the CPU chip
22 can go out and, for example, determine a switch setting or
23 send the command to a solenoid to pop a ball out of a hole
24 or something of this.

25 Now, it is the combination of all of these

Schoeffler - direct

devices then that makes up our small computer, and to use it in an application then, I would have to have many other things; but the term "microcomputer" itself consists of these vendor supply chips, memory, CPU chip, and in input/output kinds of chips to carry out that application.

Now, if I were to take the word "microcomputer" and apply it to a single chip, I would be blacking out the rest of the computer, but, as I said, those interested people are usually in the industry called a vendor. If you are a vendor, you are going to sell a chip, and you are going to sell it from each of the vendors that make up the microcomputer. So, if you are a vendor, you should be able to explain. We are going to take the word "microcomputer" and apply it to the chip that has been called out the term "microcomputer".

Now, if you apply the word "microcomputer" to a single chip, you are going to be wrong.

The chip that I have called the "Intel 8080" chip is the microprocessor chip. Its correct technical term is actually the microprocessor chip; that is, the single chip that does the calculation is technically the microprocessor.

Now, in common terminology, however, and even the word "microcomputer" often is the entire microcomputer, and so that is a confusion between the chip. So I am going to use the word "microcomputer" for the set of chips that make up the microcomputer, and I will use the word "microprocessor" for the single chip that does the calculation.

1 Q How were those various chips interconnected to make a
2 microcomputer?

3 A I didn't attempt to draw it on the diagram, but these
4 dominoes containing the electronic circuits, of course, have
5 connections coming off of them and all of these have to be
6 connected together. So there are wires all over the place
7 printed on the board that I didn't show. It would all be
8 black if I really showed it that way, but basically those
9 interconnections are commonly in the industry called a bus.
10 It is a pathway along which the information can pass to and
11 from each of the major components in the microcomputer.

12 Q Dr. Schoeffler, could you please explain. We are using
13 the term "microcomputer" and in the past the Court has heard
14 the term "microprocessor."

15 Could you explain the difference or similarity
16 between them?

17 A The chip that I have called the central processor chip
18 in the microcomputer, its correct technical term is actually
19 the microprocessor chip; that is, the single chip that does
20 the calculation is technically the microprocessor.

21 Now, in common terminology, however, one uses
22 the word "microprocessor" often for the entire microcomputer,
23 and so that gets confusing between the chip. So I am going
24 to attempt to use the word "microcomputer" for the set of
25 vendor supplied chips and equate that to microprocessor.

Schoeffler - Direct

1 So I will use those interchangeably, and when
2 we talk about the chip itself, try to be consistent and call
3 that a CPU chip.

4 Q Dr. Schoeffler, would you please explain what a computer
5 program is and how it operates?

6 A As we indicated in the microcomputer, all of the control
7 of this has to reside in the CPU chip. It is the brains or
8 the traffic cop that directs all of the input, all of the
9 output, all of the calculations that are done, things of
10 that nature.

11 I prepared this exhibit or this sketch,
12 which is labeled PX-387, to attempt to explain the importance
13 of the concept of a program.

14 I have drawn the analogy with a train on a
15 track. Basically the definition of a program is easy. It
16 is a sequence of operations or instructions that the com-
17 puter is supposed to carry out.

18 These are very elementary things. Just like
19 the keys on a calculator, I can add things, subtract things,
20 read data in or send data out.

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Schoeffler - Direct

1 We can imagine in this analogy that all of
2 these railroad ties along here are the individual instruc-
3 tions in the computer program. Computer programs involve
4 hundreds and hundreds and thousands and thousands of such
5 instructions. If we imagine those to be the instructions,
6 and if we imagine the engine to be the computer, the CPU
7 chip executing or carrying out those instructions, then the
8 carrying out of a program is simply find an instruction, do
9 what it says, find the next instruction, do what it says,
10 find the next instruction, and do what it says.

11 If you put enough of these together, you will
12 do a payroll, or if you put enough of them together, you
13 will -- properly, of course -- you will carry out a pinball
14 application.

15 Now, down here in the center of this exhibit
16 I have shown a bypass track or sequence of instructions, an
17 alternate path and a switch, and just as we can imagine the
18 train taking one track or the other, depending on which way
19 the switches close, we can imagine a computer program that
20 is proceeding along executing one instruction at a time. --
21 When it gets to the point where it has received a piece of
22 data; for example, this switch is closed -- instead of pro-
23 ceeding with this series of instructions, it may proceed
24 with this series of instructions, which might then call for
25 updating a certain score or a target or popping up a

Schoeffler - Direct

1 solenoid or what-have-you, whatever these instructions are
2 intended to carry out.

3 Now, that is a very gross simplification,
4 oversimplification. In a real program, there are dozens
5 and dozens and dozens of such bypasses or loops or sub-
6 routines, each of which is designed to carry out specific
7 tasks that are unique to the particular application of the
8 microcomputer.

9 Q Dr. Schoeffler, I show you Plaintiff's Exhibit 30 and
10 ask you if you can identify that.

11 A Yes. This is a copy of the Flicker program which is
12 part of the Nutting/Frederiksen patent.

13 Q Have you had an occasion to review this program and
14 determine how it operates?

15 A Yes, I have.

16 Q Could you please explain just in general terms what
17 this program is and relate it to your example that you
18 showed, the last example you discussed?

19 A Yes, I will.

20 Each and every line on each of every page --
21 there are nine pages -- is an instruction which corresponds
22 to one of the railroad ties here.

23 As I recall, there are -- Frederiksen
24 testified that there were eight or 900 such instructions
25 in this program. So each one of those is a railroad tie and
has to be executed at the appropriate time by the train.

1 through those instructions one instruction at a time and
2 then perhaps return to where you were, so that you can con-
3 tinue with what you were doing.

4 Q Dr. Schoeffler, approximately how many different types
5 of instructions are contained, for example, in Plaintiff's
6 Exhibit 30, approximately?

7 A Oh, I don't even remember the number of different in-
8 structions for this particular microcomputer; 50 or some-
9 thing like that.

10 Q On the order of 50?

11 A I would guess offhand, but I do not recall the number.
12 It is on that order of magnitude, I am sure.

13 Q So the programmer, when he generated this, he had to use
14 these various instructions, these 50 instructions, to
15 generate a program in order to make the pinball machine
16 operate the way he wanted it to, isn't that true?

17 A That is correct.

18 Once you pick a particular microcomputer,
19 the Intel microcomputer, for example, that Nutting used in
20 the Flicker, the manufacturer has built into it these 50
21 instructions, and the machine knows how to do those and no
22 others.

23 So if you want to use it, you have to couch
24 your solution in terms of those 50 instructions. So you
25 arrange them in an infinite variety of sequences in order

Schoeffler - Direct

1 Now, as you look down the first page of that
2 program, you see some organization of the program that is
3 important to understanding what is going on and how the
4 program controls a real time system like a pinball machine.

5 For example, on the right, we see all of the
6 comments that are actually written in English so that one
7 can read them and pretend to understand them at least:

8 Set Game Over, Switch Subroutine, Ignore a Noisy Switch.

9 These are called comments. They are ignored
10 by the computer. They are there in the hope that someone
11 reading this program can decipher it because the reading of
12 the instructions themselves is very non-obvious when one
13 sees the names of the instructions that come down the center
14 column right here.

15 Now, equally important and interesting and
16 relevant to the patent are the names down the left-hand
17 column. We see a name like main switch, D-E-C-R, which is
18 an abbreviation for decrement. And on the succeeding pages:
19 Timer, MUX, for multiplexing, Overflow -- each of those
20 starting with that name and then down to the next name on
21 the page corresponds to a section of the program and is more
22 or less analogous to one of these bypass routines over here.

23 So this program is organized so that, roughly
24 speaking, if it is now time to do scoring, you go off and
25 find the section of the program called scoring and run

John Schoeffler - Direct

1 to carry that out. It's not like a payroll application.

2 Q Could you characterize this as, for example, a symphony
3 using these 50 instructions or 50, for example -- the certain
4 number of notes, and it is combined to make this machine in-
5 operate in an appropriate manner to make it operate as a pin-
6 ball machine? A Yes, and you have to know when they are

7 A You could if you are trying to bring out the point that
8 an application, like the pinball machine, requires many,
9 many different things to be done. Design a controller that

10 will do it right every
11 time. And many things going on at the same
12 time. As a result, it is necessary to organize the program
13 and the sequences of instructions in such a way that all of
14 those things happen, and nothing like that works in practice,
15 as seen by experience. Unless it is put together as carefully
16 as your symphony, very carefully planned and designed.

17 That was my point when I mentioned that you
18 not only had to recognize the problem; you had to devote
19 human resources to it to solve it in a correct fashion.
20 It is a very, very difficult problem to design a solution
21 to a real time system using instructions like this and hard-
22 ware.

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Schoeffler - direct

1 It is really not like the payroll application
2 where I know if I get your hours worked and look up your
3 salary, I do this, do this, do this, and I am through.

4 The real time kind of application like the pin-
5 ball machine is very much centered around events that occur
6 that you cannot anticipate, and you have no idea when they are
7 going to occur. You have no idea when the ball is going to
8 hit a bumper. You have no idea when a switch is going to
9 open or close. It is your job to design a controller that
10 will do the right thing.

11 So there are many things going on at the same
12 time. As a result, it is necessary to organize the program
13 and the sequences of instructions in such a way that all of
14 those things happen, and nothing like that works in practice,
15 as has been my experience, unless it is put together as carefully
16 as your symphony, very carefully planned and designed.

17 That was my point when I mentioned that you
18 not only had to recognize the problems; you had to devote
19 enough resources to it to solve it in a correct fashion.
20 It is a very, very difficult problem to design a solution
21 to a real time system using instructions like this and hard-
22 ware.

Schoeffler - direct

1 And furthermore, it's the relationship between
2 the hardware and the software is very, very tight. They
3 interrelate, and they are very closely coupled.

4 It isn't like the general purpose computer
5 that you use for everything. It is really directed toward
6 a specific kind of application.

7 THE COURT: This might be a good time for us to
8 recess. Tomorrow let's make it 10:30. I've got quite a full
9 program. 10:30 tomorrow.

10 MR. TONE: 10:30, your Honor.

11 THE COURT: I might as well tell you now that the
12 present outlook for the future is that, when I get back
13 from the meeting on the 18th, I've got a sentencing that they
14 tell me is going to take all day on the 19th.

15 I had thought it would take an hour. The
16 government wants to put on evidence, and they want to take
17 all day. So that's the 19th.

18 And then I've got a hearing in another case
19 that has to be done now; that's going to take all day Friday,
20 the 20th, and all day Monday, the 23rd, according to what
21 they presently tell me.

22 So instead of getting back to this case on the
23 19th, as I told you last week, it now looks like we'll get
24 back to it on the 24th, Tuesday the 24th.

25 If there's any change in that, I'll let you

Schoeffler - Direct

1 know. But it looks to me like that's the most probable pro-
2 gram.

3 MR. GOLDENBERG: Judge, do I understand correctly
4 we are to have access to those notes that the witness had?

5 MR. TONE: I'm not sure -- certainly they're en-
6 titled to anything the witness used in preparing -- I'm
7 not quite sure they're entitled to them in the middle of
8 his direct examination, however, your Honor.

9 I think we would say they are not.

10 THE COURT: Well, it's just a matter of convenience,
11 I suppose. If they get them after the direct is concluded,
12 and they need time to study them in order to use them in
13 cross-examination, that means we've got dead time here.

14 It's similar to the Jenks Act kind of situa-
15 tion. I tell the government: Turn it over so we don't have
16 to take a recess after the direct examination for the
17 cross-examiner to look at the material.

18 So I would recommend that you, if it's
19 available now, turn it over now. That way they can go
20 right into cross-examination without having to take time
21 to study it.

22 These things usually turn out to be no big
23 deal, and maybe that's the situation here.

24 All right. I'll see you tomorrow at 10:30.

25 (Proceedings adjourned from 5:45 p.m. to the next day
at 10:30 a.m.)